Printer's Library

PLEASE RETURN

~~£8-50~~ £c

ARCHAEOLOGIA

OR

MISCELLANEOUS TRACTS

RELATING TO

ANTIQUITY

PUBLISHED BY THE

SOCIETY OF ANTIQUARIES OF LONDON

VOLUME XCIV

(SECOND SERIES, VOLUME XLIV)

PRINTED AT OXFORD
BY CHARLES BATEY FOR
THE SOCIETY OF ANTIQUARIES
AND SOLD AT THE SOCIETY'S APARTMENTS IN BURLINGTON HOUSE, LONDON
M CM LI

PRINTED IN GREAT BRITAIN

TABLE OF CONTENTS

PAGE
I.—*Castle Rushen, Isle of Man. By* B. H. ST. J. O'NEIL, *Esq., Vice-President* . 1
II.—*Aeolipiles as Fire-blowers. By* DR. W. L. HILDBURGH, *F.S.A.* . 27
III.—*The Defences of the Citadel of Damascus; a Great Mohammedan Fortress of the Time of the Crusades. By* D. J. CATHCART KING, *Esq., M.C., LL.M.* 57
IV.—*The Ka'ba in* A.D. *608. By* PROFESSOR K. A. C. CRESWELL, *F.B.A., F.S.A.* 97
V.—*A Stone Industry from Morar, Inverness-shire; Its Obanian (Mesolithic) and Later Affinities. By* A. D. LACAILLE, *Esq., F.S.A.* . . 103
VI.—*Pictor in Carmine. By the late* M. R. JAMES, *Esq., O.M., Litt.D., F.B.A., F.S.A.* 141
VII.—*The Cult of St. Oswald in Northern Italy. By the* REV. E. P. BAKER, *M.A., F.S.A.* 167
VIII.—*Visigoth or Vandal? By* E. THURLOW LEEDS, *Esq., M.A., F.S.A.* . 195
Index 213

LIST OF ILLUSTRATIONS

Castle Rushen, Isle of Man: PAGE

Fig. 1. First Floor plan: Castle Rushen 5
Fig. 2. Plans of the Keep: Castle Rushen 9
I. *a*. An air view of Castle Rushen from the south-east. *b*. Castle Rushen, 'A North-Eastern View Thereof, taken from the River', inset in S. Fane's plan, *c*. 1760 . . . .
II. Castle Rushen, *a*. From the west; 1774. *b*. From the north; 1774. *c*. From the south; 1774. *d*. From the south; 1815 . . .
III. *a*. Outer Gatehouse, Keep, and Round Tower from the north. *b*. Outer Gatehouse and Keep from the north; *c*. Barbican and Keep from the east; *d*. Keep and Curtain from the south-west . . . . .
IV. *a*. Keep of Trim Castle, Co. Meath, Ireland; *b*. Keep from the south; *c*. Keep from the north-west; *d*. Barbican and Keep from the north-east .
V. *a*. Doorways at first-floor level of Keep; *b*. Window at second-floor level of South Tower of Keep (Style IV below); *c*. Doorway in Museum on second floor of Keep; *d*. Doorways at ground level of Keep, north-west corner
VI. *a*. West Tower of Keep from south-west; *b*. Round Tower from south (Style VI); *c*. Barbican from north (Styles VI, VII, and VIII); *d*. Gunport in Round Tower from within. . . . . . . *following* 26
VII. *a*. Base of East Tower and east side of Keep (Style I to left, Style III to right); *b*. Base of south part of east side of Keep (Style I with offset); *c*. North-east side of forebuilding (Style I with modern batter below); *d*. Summit of Keep (Style V) . . . . . .
VIII. *a*. Curtain and East Tower of Keep from south-east; *b*. Exterior of Curtain, west side; *c*. Outer Gatehouse from south-west; *d*. Doorway at top of Keep (Style V) . . . .
IX. *a*. West Tower of Keep from south-east (at left Style III, above Style II); *b*. West Tower (top) of Keep from south-west (Style V, above Style III); *c*. West Tower of Keep and old curtain from north; *d*. Wall (Style VII) of the Bulwark . . . .
X. Ground-floor plan: Castle Rushen . . . . .

Aeolipiles as Fire-blowers:

Fig. 1. Design for an aeolipile by Virgil Solis 34
Fig. 2. Design for an aeolipile by Jean Goujon 34
Fig. 3. Sketch of a figure found in South Russia 43
Fig. 4. Note by Leonardo da Vinci 50
XI. *a*. The Sondershausen 'Püstrich'; *b*. The Sondershausen 'Püstrich', from a seventeenth-century broadsheet . . . . *facing* 36
XII. *a*. 'Jack of Hilton'; *b*. Figure from Tamworth . . .
XIII. *a*, *b*, *c*. Figure belonging to the Society of Antiquaries; *d*. Figure belonging to Herr R. von Hirsch . . . . . . *following* 36
XIV. *a*. Figure in Vienna Kunsthistorisches Museum; *b*. Female dwarf: detail of a painting by Velazquez; *c*. Roman bronze dwarfs in the British Museum. *facing* 37

PAGE
XV. *a.* Sheet-copper head in Correr Museum, Venice; *b.* Sheet-copper head in Hamburg Museum; *c.* Sheet-copper head in the British Museum; *d.* Cast bronze head in Musée du Louvre . . . . *facing* 48
XVI. *a.* Himalayan steam fire-blowers in the British Museum; *b.* Thirteenth-century Islamic pottery vessels in the Victoria and Albert Museum; *c.* Thirteenth-century Islamic pottery vessels in the British Museum . *facing* 49

Defences of the Citadel of Damascus; A Great Mohammedan Fortress of the Time of the Crusades:

Fig. 1. Towers 2 and 3 67
Fig. 2. The East Gate 77
Fig. 3. Towers 8 and 9 81
Fig. 4. Tower 10 85
Fig. 5. Tower 11 88
Fig. 6. Tower 12 90
Fig. 7. Defences of the City at the north-east angle of the Citadel . . . 95
Fig. 8. The fortified mill on the Banias 96
XVII. *a.* Tower 4. Parapet, looking east; *b.* Towers 4 and 3 from the north; *c.* Towers 3 and 4 from the south-west; *d.* Curtain 6–7, front .
XVIII. *a.* The East Gate; *b.* Tower 9 from the north; *c.* Tower 10 (the North Gate), from the east; *d.* The North Gate from the rear, state in 1914. The wall of Tower 14 is in the foreground . . . . .
XIX. *a.* Tower 3 from the east; *b.* West face of Tower 3, showing brattices; *c.* Towers 7 and 6 and curtain between them, from the west; *d.* Tower 8 from the north-west; condition in 1914 . . . . . *following* 96
XX. Plans and Sections of Tower 4 . . . . . .
XXI. Plan of the Citadel of Damascus . . . . .

The Ka‘ba in a.d. 608:

Fig. 1. The Ka‘ba, as rebuilt in a.d. 608 99
Fig. 2. Window and door construction (from Krencker) 100
Fig. 3. Base of Aksum stela (from Krencker) 100
XXII. *a.* Imrahanna Kristos (Imraha). North façade of church in cave (from Buxton); *b.* Debra Damo. Porch (original west front on right) (from Buxton); *c.* Imraha. Windows of east end (from Buxton) . . . . *facing* 100

A Stone Industry from Morar, Inverness-shire:

Fig. 1. Map of the Rough Bounds, showing the prehistoric sites . . . 104
Fig. 2. Map of the Morar district 108
Fig. 3. Morar flint industry, and a piece of bone 114
Figs. 4 and 5. Risga stone industry 119
Fig. 6. Risga stone industry 121
Fig. 7. Risga: bone implements and fragments 121
Fig. 8. Risga: antler implement 123
Fig. 9. Risga bone and antler industry 124
Fig. 10. ‘Limpet hammers’ 125
Fig. 11. Sanna Bay industry 129
Fig. 12. Drynan Bay stone industry 131

PAGE
FIG. 13. Drynan Bay flint industry 131
FIG. 14. Bruach na Maorach stone industry 135
FIG. 15. Buchite industry from Tote, Skeabost, Isle of Skye . . . 135
XXIII. *a.* The Morar Estuary, Inverness-shire, from the north; *b.* Ancient storm-beach in extinct bay at Rudha'n Achaidh Mhòir, Morar, looking south-easterly . . . . *facing* 108
XXIV. Ancient storm-beach in extinct bay at Rudha'n Achaidh Mhòir, Morar, looking north-westerly; *b.* Risga Island from Glen Borrodale Castle . *facing* 109
XXV. Morar quartz industry . . . . *facing* 112

PICTOR IN ÇARMINE:

XXVI. Pictor in Carmine. Corpus Christi College, Cambridge, MS. 300. Two pages of the Table of Subjects . . . . *facing* 142
XXVII. Pictor in Carmine. Corpus Christi College, Cambridge, MS. 300. Two pages of Text, showing marginal notes . . . . . *facing* 143
XXVIII. Pictor in Carmine. Mr. Hely-Hutchinson's MS., formerly Phillipps MS. 11059. The complete text of the Preface . . . . . *facing* 144
XXIX. Pictor in Carmine. Mr. Hely-Hutchinson's MS., formerly Phillipps MS. 11059. Last page of Table of Subjects and beginning of Text . . *facing* 145

THE CULT OF ST. OSWALD IN NORTHERN ITALY:

FIG. 1. Title-page of office book in the church of S. Silvestro in the Correr Museum Library 169
FIG. 2. Map of north-east Italy 172
FIG. 3. Seventeenth-century Woodcut 174
FIG. 4. Fifteenth-century Woodcut (German) 174
FIG. 5. The environs of Sauris 176
FIG. 6. The South Tyrol 180
FIG. 7. The upper valley of the Etsch 187
XXX. *a.* S. Stae, Venice; *b.* Rossi's design for S. Stae, Venice . . *facing* 168
XXXI. *a.* G. B. Tiepolo: St. Maximus and St. Oswald. Formerly in S. Massimo, Padua; *b.* G. B. Tiepolo: St. Maximus and St. Oswald, Accademia Carrara, Bergamo; *c.* Domenico Tiepolo: Holy Family and St. Oswald, Merlengo . *facing* 169
XXXII. *a.* Statue on façade, S. Stae, Venice; *b.* A. Balestra: Glorification of St. Oswald, S. Stae, Venice; *c.* C. Unterbergher: St. Oswald kneeling before the Cross, S. Osvaldo, Rovereto; *d.* G. Franceschini: SS. Cecilia, Lucy, Margaret and Oswald, S. Maria Incoronata, Bologna . . . . . *facing* 170
XXXIII. *a.* M. Barth: Wooden triptych, S. Osvaldo, Sauris; *b.* A. Belunello: St. Florian and Saints, S. Floriano, Forni di Sopra . . . . *facing* 171
XXXIV. *a.* The Façade, S. Vigil unter Weineck, Bozen; *b.* St. Oswald, the Cathedral, Brixen; *c.* St. Oswald giving his wife to Christ, S. Vigil unter Weineck, Bozen . . . . *facing* 178
XXXV. *a.* St. Oswald, S. Johann, Taufers (Münstertal); *b.* Pilgrim's medals from Sauris; *c.* Sauris. 5 August 1947; *d.* Silver Pax, S. Leonardo, Treviso *facing* 179

VISIGOTH OR VANDAL?:

FIG. 1. Map showing distribution of brooches of types 1–3 and route of march of Vandals and their allies 197

PAGE
FIG. 2. Brooches of type 1 from Eastern Europe 199
FIG. 3. Brooches of type 1 from Italy and France 207
FIG. 4. Brooches of type 1 from Spain 209
XXXVI. *a*. Gold jewelled brooch of type 2. Com. Szilágy, Szilágy Somlyó, Hungary; *b*. Silver brooch of type 1, with gold appliqués. Mesö-Kaszony, Com. Bereg, Hungary . . . . *facing* 195

Castle Rushen, Isle of Man

By B. H. ST. J. O'NEIL, Esq., *Vice-President*

[*Read 13th November 1947*]

CASTLE Rushen is one of the most interesting castles in the British Isles, both because of its remarkable state of preservation and by reason of its position as one of the chief seats of authority in the island from the time of its erection down to and including the present day.

It is, therefore, all the more regrettable that there is no record of the date of erection of any part of the castle before the year 1582/3, at which time its days as a fortification were almost, although not quite, over. The historian is, therefore, left to rely upon the general history of the island and upon the evidence of the masonry itself, in order to determine the progress of its growth during the middle ages.

The general history of the island has been ably dealt with by A. W. Moore in his *A History of the Isle of Man* (T. Fisher Unwin, 2 vols. 1900), from which nearly all the historical information in this article has been obtained. Much of the architectural information herein may also be found in Armitage Rigby's *Castle Rushen* (Victoria Press, Douglas, I.O.M., 1927). Rigby was the architect of the restoration of *c.* 1910 under the late Lord Raglan, but he died before publishing the results of his work, which were published by others in his memory. Had Rigby lived to complete and publish his own work, it is likely enough that this study would have been unnecessary. He was in advance of most men of his day in the knowledge of medieval military architecture. The plans here published are prepared from his basic survey before he did his restoration. They are the property of the Manx Museum and have not been published before.

It seems that the time of settled authority in Man begins with the reign of Godred Crovan, of whose origin nothing is known save the record that he was the son of Harold the Black of Iceland, and that he conquered Man only at his third attempt. He died in 1095, and seems to have been the same as the King Orry of Manx traditions. Soon after his death, in 1098, Magnus Barefoot, king of Norway, the overlord of the king of Man, visited the island. He made it his abode, and according to a record of *c.* 1260 erected forts there. It is, however, expressly stated that he caused the men of Galloway to bring timber for them. Timber has always been, and still is, scarce in Man, and its importation at this time shows that the fortifications were not of stone.

Since there is no lack of small trees on the island, it may be supposed that the timber imported was large, such as would be needed not for palisades but for substantial buildings or towers. It is natural, therefore, to suggest that Magnus was in actual fact erecting mottes of normal late-eleventh- or early-twelfth-century character. There is nothing in the historical record against this supposition, but it has not hitherto been normal to identify any mottes in Man, because the island had no Norman invasion. Half a mile north-east of Port Erin, however, stands Cronk y Mur (Cronk Moar on modern maps), a flat-topped grassy mound, 30 ft. high, surrounded by a wide ditch, now silted up. Excavation some years ago showed that the base of this mound is natural, but did not determine the character of its top, save that on it rests a rectangular stone building of unknown date. There are faint traces of a possible bailey bank to the east of the ditch, and in the present writer's opinion Cronk y Mur is certainly a motte of typical character. It stands at the southern end of a track leading north-eastwards along the island, and in a good position to command several suitable landing beaches. It may be considered as the predecessor of Castle Rushen.

The first mention of Rushen is in connexion with the Cistercian abbey there, which was founded by Olaf I in or about 1134. He died in 1153, being succeeded by his son, Godred II, who was also elected king of Dublin and who seems to have been the first king of Man to have official dealings with England. The English records do indeed suggest that he did homage to Henry II of England. This is by no means impossible, since later kings of Man considered it prudent to do homage to a nearby king as well as to the king of Norway. Godred II died in 1187 at Peel.

The earliest masonry remaining at Castle Rushen is that of limestone rubble, roughly dressed, but never really squared (8–18 in. long), and as a rule fairly well coursed (*c.* 8 in. to the course). The colour is pale grey, the normal colour of this local stone (pl. VII, *a* and *b*). Masonry of this kind comprises the lower part of a rectangular keep with forebuilding, such as was common building practice in the latter part of the twelfth century in England (pl. X and fig. 1). Except where it is obscured by later additions, i.e. in the centre of each side, this masonry is everywhere preserved externally up to a narrow offset (4–6 in. wide), which is usually *c.* 15 ft. above modern ground-level.[1] Above this offset this earliest masonry is best preserved at the four angles, where it stands ten to twelve courses—say 8 to 10 ft.—high. Elsewhere on the east side it has been disturbed by a large hole, cut in *c.* 1815 to make an entrance for carts and marked by a long slate lintel, which has now been filled in with limestone rubble of somewhat different character. On the south side it is only preserved up to about 3 ft. On the west side at its southern end it is doubtful whether this style occurs at all above the offset, but close to the north-western angle it is again visible almost up to 8 ft. above the offset.

Internally the story of the masonry is almost precisely the same. In the eastern wall there has been a cut through to make an entrance for carts in *c.* 1815. This opening is now blocked, but is marked by a wide recess with segmental arched head. The lower part of the eastern half of the northern wall of the keep is in style I up to a ledge, which is plainly not an original offset, but the mark of division between two periods of building, the later being set back from the line of this earlier style. A little of the walling of the west wall of the keep, close to the south-western corner, by the stairs of 1815, also seems to be of this style, as is most of the old work visible in the store-room along the southern wall, but there is no more like it at ground-level of the keep.

On the first floor (fig. 1) this style of masonry is visible in the east wall of the hall, not very high at its northern end (*c.* 1 ft. 6 in.), but rising gradually to 6 ft. at the south-east corner. In the south wall of the hall most of the eastern end has been disturbed by recent work (Rigby), although the splays leading to the curiously shaped opening with yellow sandstone dressings, which Rigby called a pantry, are certainly in this style and externally this opening is set in style I masonry. The doorway to the southern tower is plainly an insertion into earlier work, but in the centre style I occurs again up to 6 ft. in height. The doorway at the western end of the hall is also a plain insertion into earlier work, but beyond this point the southern wall is in style II. The southern end of the western wall has been altered, when the prison stair was inserted in *c.* 1815, but in the central portion of this wall style I occurs up to 1 ft. 6 in. or so and it rises up to 4 ft. or more at the north-western corner.

---

[1] The bottom few feet of the keep are everywhere obscured by a modern batter.

A close comparison of this evidence with that of the exterior will show how precisely the two correspond. This similarity in itself is a confirmation at once of the value of such a close study and of the significance of it in this instance by establishing the former existence on the site of a rectangular keep of normal type. This study and its result were, of course, proclaimed by Rigby.

This conclusion is still further confirmed by the discovery of the lowest courses of a forebuilding. The great gatehouse of the keep, itself built in the fourteenth century, as is explained later, is composed of a very distinctive style of masonry. Below the lowest courses of this style (III), in its eastern wall and eastern half of its northern wall, there are four courses of cruder work, which closely resembles that of style I (pl. VII, *c*). This walling is present in the northern wall of the gatehouse to within 2 or 3 ft. of the western flank of the later drawbridge pit. Similar walling seems to exist under a thick coating of whitewash on the inner face of the western guard-room of the inner gatehouse (pl. X).

These pieces of style I masonry, when seen on plan divested of later additions wherein they were put to other purposes, are clearly situated correctly for interpretation as parts of a forebuilding of normal twelfth-century type. In this the stair to the first-floor entrance of the keep would have ascended from the ground outside at first southwards through the northern wall of the forebuilding, perhaps starting, as sometimes occurred, well outside the line of that wall, and so passing over its extant remains. Then the stair would have turned to the left and ascended, with the main wall of the keep on the right, to a platform over a pit, the platform itself being, as usual, movable in case of necessity to prohibit access by an enemy. If it be objected that the width of this forebuilding, as set out on plan, is greater than would be needed for such a stair, then it may be suggested that at first-floor level it contained a chapel. It would be correctly orientated for the purpose, and chapels are of common occurrence in the forebuildings of large Norman keeps, as at Dover.

There is now no real evidence of the internal arrangements or original height of the keep. It is likely that there was an internal dividing wall from east to west. This was quite normal in keeps of large or even medium size, and is especially likely in Man, where timber of any size for floors and roofs has always been scarce. Excavation below the present floor might bring to light evidence of value in this connexion. Rigby says that the original cobbled floor lies 8 ft. below the present ground floor, and that the present internal walls rest on filled-in debris.[1]

---

[1] *Op. cit.*, p. 34.

This keep, as has been mentioned, closely resembles examples in England in the latter part of the twelfth century. They were especially common in the later part of the reign of Henry II, *c.* 1170, and there is at least one example in Wales, Dolwyddelan Castle in Caernarvonshire, which is believed to have been built by the Welsh at about the same time.[1] There is, therefore, no difficulty in attributing this earliest masonry at Castle Rushen to the same period, even were it not likely that the Norsemen could and did become acquainted with the erection of stone keeps otherwise than from their English contacts. In actual fact the rectangular tower, which forms the innermost part of Cubbie Roo's Castle, Wyre, in Orkney, very closely resembles the keep of Dolwyddelan Castle and other possible Welsh keeps such as Dinas Emrys, Caernarvonshire. Yet it was probably built between 1150 and 1160,[2] and can hardly be held to be due to English influence, since no such building has yet been certainly identified on the mainland of Scotland. Thus it may well be that the builder of the keep of Castle Rushen was King Godred II (1153–87).

Godred II was succeeded by his son Reginald, who was described as a 'man of war', a real Viking, who for three years continuously lived on board ship. In his time England first appears prominently in Manx history. John de Courcy, lord of Ulster, married Reginald's sister. When de Courcy resisted King John, Reginald helped his brother-in-law. In consequence he was in disfavour with the English king. He seems, however, in or about 1204, to have recovered favour, since after doing homage he received lands in Lancashire. After a long reign Reginald was supplanted by Olaf II, his brother, who seems to have been more at home in the north of the island. He may indeed have headed the resistance to Reginald's anglicizing policy. It is at least certain that Reginald, seeking to reconquer his kingdom, came to the southerners for their support, anchoring at Ronaldsway. This was in 1228. Soon afterwards he was killed in battle.

The first additions made to the rectangular keep are the lower parts, about one half, of the south and west towers (pl. X and fig. 1). This is shown by their style of masonry (style II), limestone rubble, well dressed and sometimes squared, usually well coursed. The stones are of fairly uniform height, *c.* 8–12 in., but they vary much in length, being often 12–16 in. long, although sometimes they measure about 10 in. square. Their colour is the normal pale grey. The mortar is paler, but otherwise like that used in style I (pl. IX, *a* and *c*).

This style occurs nowhere in the castle except in these towers, and associated with it—in the west tower—is one narrow window of the size usual in later work at Castle Rushen, but with head, sill, and jambs all of the same limestone as elsewhere in this style, with a wide chamber. The other two windows in the midst of masonry of this style seem to be later insertions or repairs.

Externally masonry of this style II occurs in the south tower from the top of the batter for about twenty-eight courses at the south-east quoin—say 20 ft. to the level of the ceiling of the present first floor. Where the east wall of this tower approaches the south wall of the main tower (style I), it is not preserved to so great a height. At

---

[1] *Official Guide*, H.M.S.O., 1946.

[2] *Royal Comm. Anc. Mons. Scotland, Orkney and Shetland* (1946), pp. 235–9, and *Orkneyinga Saga* (Taylor, (1938), p. 275).

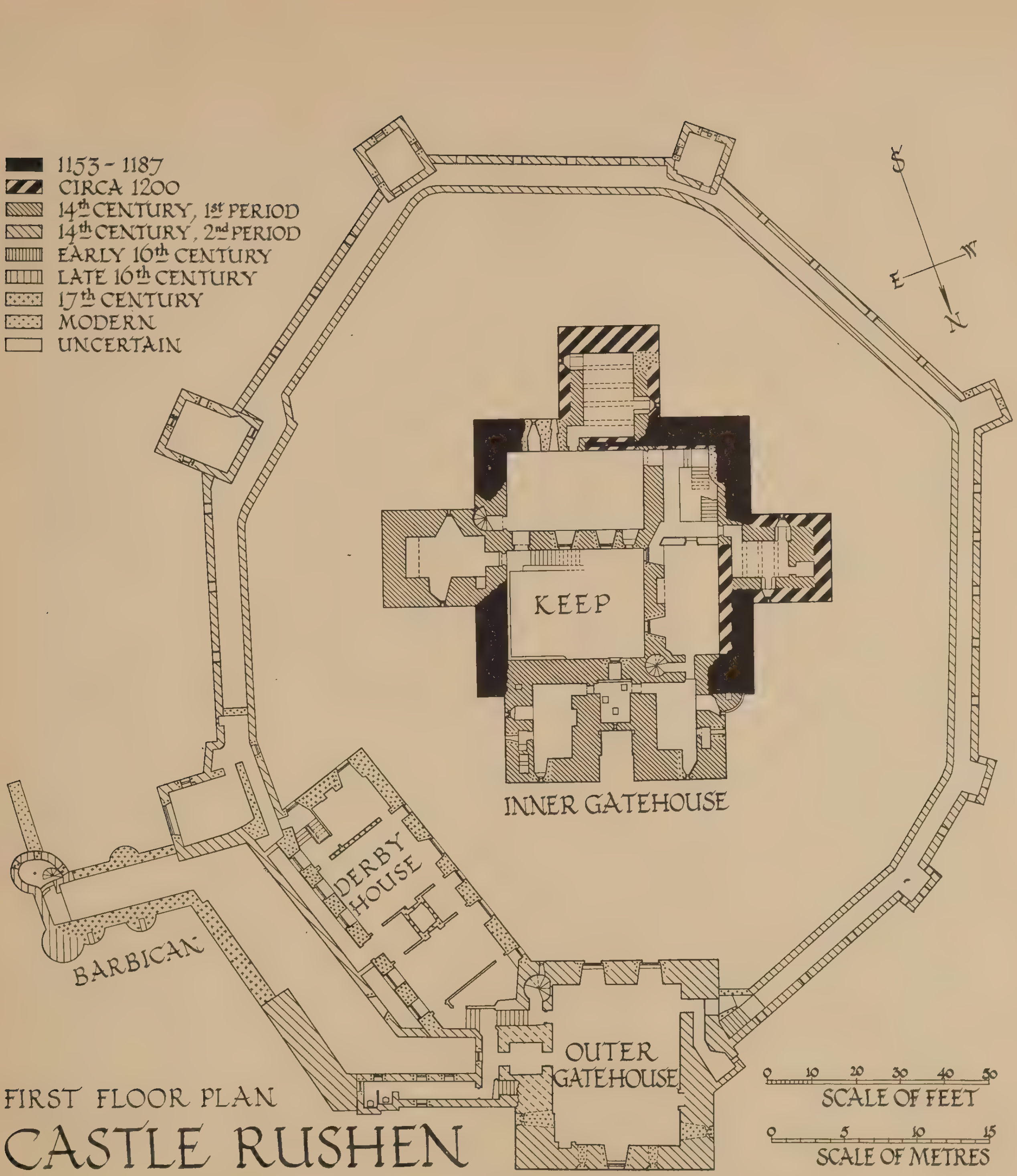

1153 - 1187
CIRCA 1200
14th CENTURY, 1st PERIOD
14th CENTURY, 2nd PERIOD
EARLY 16th CENTURY
LATE 16th CENTURY
17th CENTURY
MODERN
UNCERTAIN
S
W
E
N
KEEP
INNER GATEHOUSE
DERBY HOUSE
BARBICAN
OUTER GATEHOUSE
0 10 20 30 40 50
SCALE OF FEET
0 5 10 15
SCALE OF METRES
FIRST FLOOR PLAN
CASTLE RUSHEN

Fig. 1.

the south-west quoin about thirty courses of style II exist. Style II work occurs also in the south and west sides of the main tower, in the south wall for ten courses, in the west wall for fifteen courses. In the west tower at the south-west quoin it exists about 20 ft. high in this style, as also in the west and north faces of this tower. There are possible traces of this style between work of styles I and III in the west face of the main tower, where this tower abuts against it. A stump of a wall, perhaps once a curtain (see below and pl. IX, *c*), all in this style, projects westward from the north-west angle of the west tower. Its northern face is continuous in character, including coursing, with that of the north wall of this tower.

Internally the masonry corresponds closely in evidence with the appearance of the exterior. Style II work occurs in the south wall of the hall on the first floor above work of style I, but for only three courses. The doorways to the south tower and to the next room westward—with 'Caernarvon' lintelled heads—are plainly inserted through this walling. All the walling in the south wall beside the stair of *c.* 1815 is in this style, but the stair has obscured the evidence in the west wall at its southern end. The rest of this wall, i.e. the west wall of the room in the main tower, is in style II.

Most emphatic confirmation of this isolation of style II as a significant feature of the keep is found in the interior of the south and west towers. In the south tower the north and south walls and the splays of the two windows are in style II. All the rest of the masonry is of style III, which is described below, and in each window embrasure there is a clear vertical joint on each side between the two styles. The evidence of the west tower is identical in character, save that style II is, of course, in the east and west walls, and that the two top courses of the east wall seem to be in the later style III. Clearly in both towers the outer part of the side walls, which is of style II, has received a considerable addition of walling against its inner face at some date after the original construction of the towers. It seems clear that this work was done to carry the ribbed vaulted ceilings of the rooms, themselves devised to carry the weight of the later upper parts of the towers. These are the only ribbed vaults in the castle.

There is no other work in this style at Castle Rushen, and it may be taken as certain that the addition of these two towers to the keep, along with a stone curtain of unknown extent and certain additions or refacings to the original keep walls, mark a definite and distinct phase in the development of the castle.

Rigby's evidence shows that both towers were solid up to the level of the first floor except for a cess-pit in the west tower. In this respect they may be compared with the projections, six in number, on the keep of Conisborough Castle in Yorkshire, built in the last quarter of the twelfth century. The device was presumably adopted as a defensive measure against mining, which would thereby be rendered much more difficult, as well as to provide flanking fire for defence of the keep itself on this, the most vulnerable, side of the castle. The closest parallel, however, is the keep of Trim Castle, Co. Meath, which can be dated from ornamental features to *c.* 1190–1200[1] (pl. IV, *a*). This keep has four rectangular projections, like the two at Castle Rushen, one in the middle of each face, but they are clearly all of one build with the main part of the keep. There need be no hesitation in dating the additions to Castle Rushen, which brought it into line with the planning of Trim and of Conisborough to the early years of the reign of Reginald I (1187–1226).

---

[1] Leask, *Irish Castles*, 1941, p. 32.

Between 1265 and 1333 the history of the island was so tumultuous, owing to strife between England and Scotland, that no building activity at Castle Rushen is at all likely, save perhaps between 1298 and 1310, when Man was in the possession of Antony de Bec, bishop of Durham, by grant of Edward I of England. There is, however, no masonry extant which can be attributed to his tenure, or to any time in the fourteenth century before 1333.

The study of the stonework of the castle shows that the next style (III), the finest on the site, consists of limestone rubble, which is always well dressed and squared, often, especially at quoins, approaching ashlar in quality. The masonry is normally high in the course, 12–19 in. in height, and the stones are often 2 ft. long; the quoins are sometimes really massive. The stone is of the normal pale-grey colour, but a dark, greenish-grey band of discoloration usually occurs at the top or bottom of the stones, sometimes at both. The band is always horizontal and may be due to lichen, but it does at least give much of its individuality to Castle Rushen, because there is so much masonry of this style therein. The mortar of this work is white, and gritty, and very hard indeed (pl. IX, *a* and *b*).

Apart from the lowest three courses at and near its north-eastern corner (*v.* p. 3) the gatehouse of the keep is entirely of this style up to the springers of the sandstone arch over the gateway, i.e. for about forty-three courses (pl. IV, *c*). So far as can now be seen this work abuts against that of style I with a straight joint. The whole of the eastern tower of the keep up to the same approximate height is likewise in this style and has a straight joint against work of style I (pl. VII, *a*). The western tower of the keep has this style above that of style II for eleven courses, and it is noticeable that the lowest of the south-western quoins in the tower of style III has been set 1–2 in. back from the line of the topmost quoins of style II, thus marking the start of the new work after an interval of time (pl. IX, *a*). The main walls of the keep, where not masked by the additional towers, were heightened with masonry of style III. On the west side, south of the west tower, thirteen courses were added above work of style I, and there was a similar addition at the north-eastern angle of the main tower. There is also a little of this style in the south wall of the main tower, but in this part diagnosis is complicated by the presence of style IV. This is very much like style III, but is darker, a medium grey in colour, and lacking the discoloration which is typical of style III (pls. V, *b* and IV, *b*). The additional work of the south tower of the keep above style I is in this style IV, which occurs also at the south-east quoin (three courses) and south-west quoin (seven courses) of the main tower. The appearance and position of this style of work strongly suggest that it is contemporary with that of style III and results only from the use of a few loads of stone from an unusual bed in the limestone quarry. It is, therefore, not treated here as a separate style for purposes of dating.

Internally style III loses its characteristic striped effect, which has been described already, because it has not been in the open air or has been coated with plaster and whitewash. It is, therefore, sometimes difficult to differentiate it from work of style V, a fact which supports the contention, set out below, that they are really both of them parts of one continuous scheme. Style III internally often includes large, square blocks of stone, such as occur in style V externally, yet one can pick out longer, more regular blocks in internal style III, such as do not occur in style V. It looks as if the builders of style III chose their best stones for external work, and to a certain extent had to make do with inferior stones internally. Later, in style V, such inferior stones were not only universal internally, but were also used exclusively outside. This agrees with the evidence of the crude windows at the top of the keep in style V (see below).

The internal style III is everywhere in the internal face of the present 'courtyard' of the keep except where style I occurs, as mentioned already, and in the eastern wall where there has been a gap in fairly modern times, up from present ground-level to about the level of the heads of the second-floor windows. It occurs thus in the north and west walls; on the east wall it is five courses higher still and on the south wall it occurs up to three courses above the heads of the windows. Where the change between style III and style V is discernible, it occurs plainly at a level bed.

Inside the rooms on the ground floor of the keep, style III masonry occurs in the western store-chamber only in the south and east walls. Beside the prison staircase the type of the original masonry cannot be gauged. Of the southern store-chamber the north and west walls are of style III; the rest of the walling is of style I or due to rebuilding in the time of the prison. The walling of the guardrooms of the gatehouse is entirely of style III except perhaps for the east wall of the west guardroom, now thickly coated with whitewash, which seems to be rather in style I (*v.* p. 3).

On the first floor all walling in the inner gatehouse is of style III, as is that of the room in the east tower, which is barrel-vaulted, like the guardrooms of the gatehouse on the ground floor. The rooms in the south and west towers have the masonry of their entrance passages in this style, and also the additional thickening added to their side walls (*v.* p. 6), i.e. east and west walls in the south tower, north and south walls in the west tower. In addition there is a little masonry of style III in the top of the east wall of the west tower and in the north wall of the south tower and perhaps a little at the top of the south wall of the same tower. Both rooms are covered by barrel-vaults with widely chamfered ashlar ribs, three ribs in the west tower and four ribs in the south tower, which is the larger of the two. The hall on this floor, i.e. the room along the south side of the keep, has masonry of style III in the whole of its north and west walls and in the other walls above earlier styles, which have been already mentioned. Heavy corbels carry the ceiling. Beside the prison stair the east and west walls are of this style, whilst in the room along the west side of the keep the north and east walls are of style III, the south wall being of doubtful antiquity, but perhaps also of this time. The door through the north wall was stated by Rigby to be a modern insertion, and this statement may be true, but there seems very little, if any, evidence for it on the spot, and it is here treated as original.

On the second floor (fig. 2) style III occurs in the rooms of the east tower, in the whole southern range, including the south tower, where it is very massive, and in the west range, including the west tower, up to the level of heavy corbels which carry the modern roofs. The only possible exception to this rule is that the heads of the three window embrasures in the north wall of the south range are formed of three or more

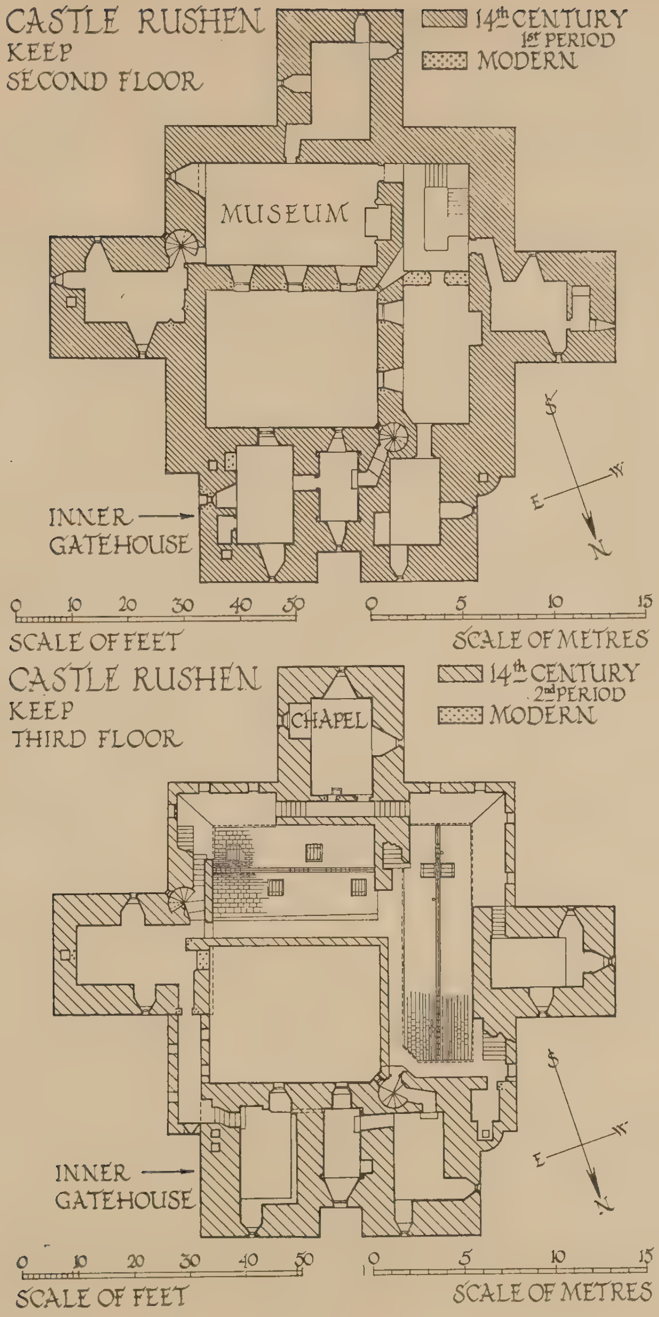

CASTLE RUSHEN
KEEP
SECOND FLOOR
14th CENTURY 1st PERIOD
MODERN
MUSEUM
INNER GATEHOUSE
S
W
E
N
0 10 20 30 40 50
SCALE OF FEET
0 5 10 15
SCALE OF METRES
CASTLE RUSHEN
KEEP
THIRD FLOOR
14th CENTURY 2nd PERIOD
MODERN
CHAPEL
INNER GATEHOUSE
S
W
E
N
0 10 20 30 40 50
SCALE OF FEET
0 5 10 15
SCALE OF METRES

FIG. 2.

thin flat stones, which are of a type used in style V work (see below). There is no sign externally of these lintels, and internally they show as possible insertions of a later period. All the second-floor rooms in the inner gatehouse have masonry of style III, although it is not always easy to differentiate it from that of style V, and the easternmost window in the south wall seems to have a multiple slate lintel of the kind used in style V.

The third-floor rooms in the gate-tower have style III work up to the top of the portcullis slots, where there is an awkward join in the masonry, an oversailing or set-back respectively of the upper work in the east and west walls. It was presumably here that Rigby found lead flashing in the wall, indicating the line of an early roof before the gatehouse was raised to its present height. In the east room on this floor there is style III masonry in the east wall to a height of 3 ft. 6 in. and in the north and west walls up to 2 ft. Above this, set back and leaving a ledge 14 in. wide, is masonry of style V, which also comprises the whole of the south wall. (The plan of this floor was made above the level of style III work.)

From this detailed examination of the masonry of styles III and IV the conclusion may be drawn that the keep was enlarged and heightened very considerably in one effort of building up to a consistent level throughout. This level is that of the springers of the inner gatehouse outer arch, i.e. at about three-quarters of the present height of the rest of the keep. This level is clearly shown by the striped external masonry of this style, but is confirmed also by the evidence of the internal walling.

In the masonry of style III there are many moulded doorways and windows. All are of sandstone, but they vary in colour from red to brown and yellow. It is usual in this style for an opening to have sandstones of more than one colour and occasionally the variegation is added to by a limestone.[1] Variegation does not occur in earlier styles, nor is it found in later work. The outer arch in the inner gatehouse (high above the ground) is not variegated, but it is uncertain to which style it belongs. Another feature of this style is the presence within it of many doorways with Caernarvon or shouldered lintels as heads (pl. V, *a*, *c*, and *d*). They also do not occur in any earlier or later style. In two cases they are plain insertions into masonry of style II (*v.* p. 6), although associated with style III work, and they are never found with masonry of style V. Other doorways with mouldings or plain chamfer, such as are elsewhere found with shouldered lintelled doorways occur also in this style in sandstone, which is often variegated (pl. V, *a*). The conclusion is inescapable that the style III dates from the time when shouldered lintels were in common use. The version of this feature used at Castle Rushen is somewhat more developed in character, more obviously decorative than purely functional, than any of those now visible at Caernarvon Castle. It is, therefore, legitimate to date the examples at Castle Rushen later than the latest building period at Caernarvon (1315–22), and thus to deduce that they, along with the great work of which they form a part, were begun very soon after the English finally secured possession of Man in 1333.

The island was granted in that year to Sir William Montacute as an absolute possession. In 1337 he was created first earl of Salisbury, but he clearly did not hold the island firmly; for in 1343 the Manx paid money to the Scots, in order that they might be left in peace. In 1346 King David of Scotland was captured at the battle of Neville's Cross, and thereafter the Scots made no serious attempt on Man, although they had not given up the idea of recovering it. In 1344 Sir William died and was succeeded by his son of the same name, who in 1381 was styled 'Lord of Man'. In 1377 the French overran Man 'al save the Castel whech Sir Hew Tyrel manfully defended: but them of the ylde were fayn to gyve the Frenschmen a M marc, that the schuld not brenn her houses'. In 1388 the Scots spoiled Man, which in 1392 was sold by Montacute 'with the crowne' to Sir William le Scroop. This history of sixty years shows the island in strong English hands, but subject to fear of attack by raiders. This is precisely the time when rebuilding might be expected, and, as already shown and later to be referred to again, a great work was undertaken. The similarity in detail with certain work in north Wales is understandable from the proximity of the latter and more especially from the fact that the Montacutes were lords of Denbigh.

---

[1] The windows in style IV work are just like those of style III, but are not variegated.

The presence of masonry of style III (or IV) up to a consistent height in the whole of the keep has already been noticed. It has also been mentioned that Rigby found evidence of an early roof in a third-floor room of the inner gatehouse. There is, however, no other evidence that the keep was ever roofed at the level of the top of style III masonry.

Masonry of style V is composed of limestone rubble, normally, but not always, very evenly coursed. The stones are dressed, but not squared, and as a rule are very high in the course, 12 in. or more, often much more, and appear sometimes to be square, like the later medieval work in the town wall of Southampton. In colour the masonry is usually pale grey. The mortar is yellow in colour and is more sandy, sometimes softer than in style III. This style occurs in the keep everywhere both externally and internally above the work of style III up to the summit of the building including the battlements except for the bellecote on the south tower, which plainly belongs to the eighteenth or early nineteenth century, and for a few repairs done by Rigby (figs. 2 and 3 and pls. VII, *d* and VIII, *d*). The work of the south tower and perhaps of the west tower and the work at the top of the south side of the main wall of the keep is less massive than that of the other towers. Dressed ashlar quoins are regularly associated with this work, but rarely with the more massive masonry, whilst the latter may even seem to overlie the former by the window in the south wall of the east tower at its summit. The inner splays of this window seem to be in the less massive style of work. The curtain is built entirely in massive style V except for the top few courses of the turrets, which, built in Roman cement, clearly date from their use as offices at about the time of the prison alterations, when they were first roofed (pls. VIII, *a* and I, *a*). The parapet has in places been repointed, even if not rebuilt, and the inner parapet is in a different style. This last may not indicate a different time of erection, because the corbels to carry it seem to belong to style V. The low walls of the buildings in the courtyard between keep and curtain, including those of the flanks of the drawbridge pit, are in this style, although it is by no means always clear how much of them is original work and how much was rebuilt by Rigby. The outer gatehouse on the curtain is externally all in style V except for two doorways in the south wall with sandstone jambs (now blocked), which were used in connexion with a gangway to Derby House and for a general slight heightening of the whole building, including new battlements with a flat coping, which probably took place early in the nineteenth century when the court house was refurnished (pls. III, *b* and VIII, *c*). Internally all walling now visible is of style V except for Rigby's repairs. In the barbican all is of style V as far as just beyond the first corner save for a slight heightening and filling-in of medieval slits just as in the outer gatehouse adjoining (fig. 1). Beyond this point the outer face resembles work of style V, but is cruder and the coursing is poorer, but the inner face of the same walling is of uncoursed small to medium rubble.

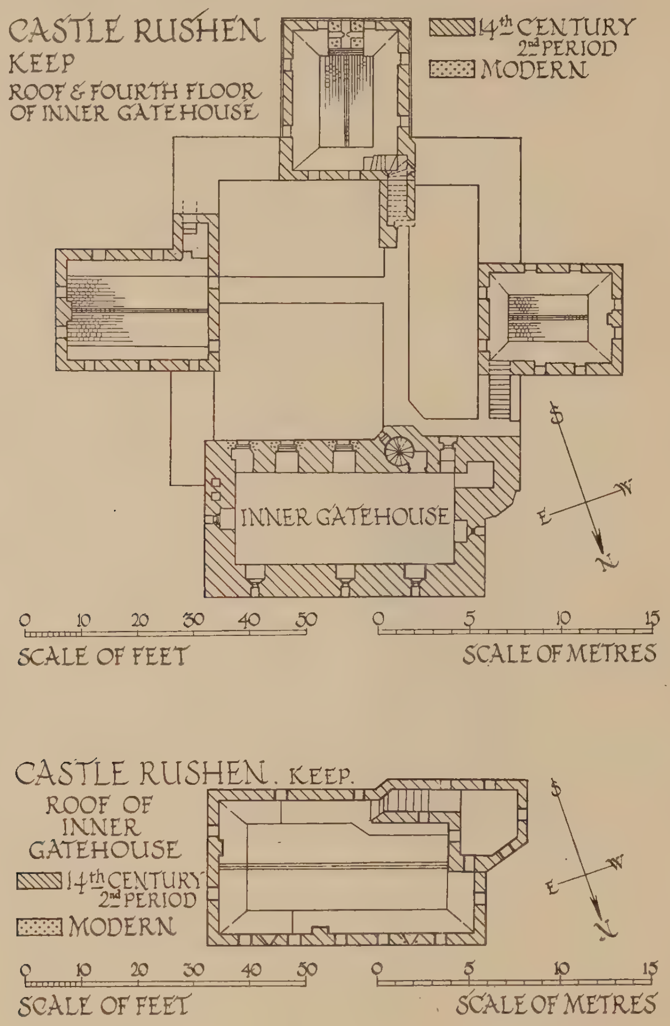

CASTLE RUSHEN
KEEP
ROOF & FOURTH FLOOR OF INNER GATEHOUSE
14th CENTURY 2nd PERIOD
MODERN
INNER GATEHOUSE
S
W
E
N
0 10 20 30 40 50
SCALE OF FEET
0 5 10 15
SCALE OF METRES
CASTLE RUSHEN. KEEP.
ROOF OF INNER GATEHOUSE
14th CENTURY 2nd PERIOD
MODERN
S
W
E
N
0 10 20 30 40 50
SCALE OF FEET
0 5 10 15
SCALE OF METRES

FIG. 3.

It has been noted already that dressed ashlar quoins do occur with the less massive work of style V on the south side of the keep. Ashlar is, however, much rarer with the more massive and characteristic work of this style. There are no shouldered lintels with any work of this style, and the normal doorway has plain square-cut limestone jambs and two, three, or even four superimposed, flat, slate lintels (pl. VIII, *d*). The windows in the south, west, and east towers, associated at least in the former two cases with less massive style V work, closely resemble the windows of styles III and IV, except that the ashlar is unvariegated orange-brown in colour, but the windows high up in the northern face of the inner gatehouse, in typically massive style V work, are different in style and very similar to those of the outer gatehouse on the curtain. The windows have sandstone jambs and heads, but these are set well back within rectangular recesses, which have square-cut limestone jambs and sloping slate dripstones over their heads (pls. III, *b* and IV, *c*). In the outer gatehouse the limestone jambs are chamfered. The turrets on the curtain have or had an indeterminate number of openings, shaped in elevation like dumb-bells, in yellow sandstone ashlar, which were certainly made for use with bows, not fire-arms.

This evidence suggests that, although there is a slight difference in style of work between the less massive and more massive masonry of style V, coupled with a different method of using ashlar, it is yet hardly conceivable that any long interval separated the two phases. Once a decision had been taken to heighten the keep, the work could not have been considered complete until the present height had been attained. Since, however, as will be mentioned below, the heightening of the keep was probably necessitated by the desire to obtain command thence of the ditch and counterscarp beyond the newly erected curtain,[1] the piecemeal progress of the heightening may in itself give a clue to the progress of the erection of the curtain. It is probable, therefore, that the southern side of the keep was heightened, because the curtain was first built along the southern side of the castle, the northern side of the keep being carried up to its present great height only after the erection of the outer gatehouse. With this gradual process of building the detailed architectural evidence is fully in accord so far as it is susceptible of being dated on its own merits. The only detail of importance, the ogee-headed and cusped window of the chapel (east side of top floor of the south tower), belongs to the less massive work of style V, but there is no reason for dating any of this style later than the fourteenth century (pl. V, *b*). Indeed, one may with confidence attribute to the two Sir William de Montacutes all the work of styles III, IV, and V between the years 1333 and 1381. This attribution has been usual amongst earlier writers, but it is as well to point out that such a detailed study of the masonry as the present merely tends to confirm the attribution. The keep, as now completed, in plan closely resembles that of Warkworth Castle, with which it is nearly contemporary.

After Scroop was beheaded in 1399 Man came into the absolute possession of the English king, Henry IV. It was granted to Henry Percy, earl of Northumberland, who rebelled, was defeated, and pardoned. Man was not restored to him, but was given to Sir John Stanley. This family was prominent throughout the fifteenth century, and contrived to maintain its eminence throughout the troubled times. Its members ruled Man through their representatives, some of them never visiting the island, and it does not seem that any external danger threatened Man during the century or indeed until the fourth decade of the sixteenth century. By that time, however,

---

[1] Such a heightening of earlier work was carried out at Kidwelly Castle, v. *Archaeologia*, lxxxiii, 101.

Henry VIII's policy led to a very real fear of the invasion of England both by the French to the south and the Scots to the north. Man had once been ravaged by the French and lay easy of access from Galloway. The lord of Man at this time was Edward, third earl of Derby, born in 1508, who took a prominent part in suppressing the northern rebellion in 1536/7 and who in 1542 accompanied Thomas Howard, duke of Norfolk, on his raid into Scotland. In 1551 he refused to renounce his title to the Isle of Man, and was prepared to resist by force. He yet remained in favour with his sovereign, and it is recorded that he was a very wealthy lord. He died in 1572.

Fortification of the northern frontier of England, at Carlisle and elsewhere, was going on apace *c.* 1540 and with a lord of the calibre already related it is unlikely that Man was left without additions to its defences, designed to meet attack with new weapons, fire-arms, which were scarcely known when its medieval walls were just completed. It is to this time, therefore, *c.* 1536–40, that there should be attributed the next building period at Castle Rushen, namely, the addition of the glacis and three towers, which hitherto, without one particle of definite evidence, has been attributed to Cardinal Wolsey when he was guardian to the infant third earl. With these additions goes an extension of the barbican.

The masonry of this style (VI) is composed of random limestone rubble, mostly small stones but with some large stones, which are usually on edge. Many very small stones occur, to level up the mortar-beds. The mortar is white or buff in colour and very hard, with larger grits in it than in the mortar of styles III or V. There is no dressed stonework.

The round tower formerly on the glacis but now detached on the north-west side of the castle is all in this style of masonry except for the top 4 ft. of its inner wall face and the upper row of corbels, which are due to a later repair, except also for the existing musket-loops which are due to later alteration of original gunports, and for some later filling over the doorway (pls. X, III, *a*, and VI, *b*). The counterscarp or glacis wall along the eastern side of the castle also seems to be in this style, although the masonry is somewhat better than in the tower just mentioned, and is inclined to be coursed. It has, however, many small stones to make up the mortar-beds, and is probably more massive than the walling of that tower only because it is a revetment wall. It has a chamfered plinth. The rest of the glacis wall appears in its present form at least to be 'modern'. The northern face of the southern wall of the barbican up to *c.* 5 ft., i.e. almost up to a wide ledge, is of style VI so far as can now be seen. This piece of masonry is 10 ft. long and abuts against the north-east turret of the curtain with a straight joint. It contains the head of an arch. On the south face of this wall the same style VI is clearly seen beside the same arch and it occurs also farther east beyond a semicircular projection, which seems to have been rebuilt in a later style. The lower part of the northern wall of the barbican is of this style on its outer, i.e. northern, face, save for the actual gate-towers. It has, however, been altered or refaced in certain parts, especially where embrasures have been remodelled in style VII (pl. VI, *c*). On the internal face this style is visible for 12 ft. only at the western end of the wall. Clearly the new glacis was brought round on the eastern side of the castle to finish at an extension of the older barbican. This extension was much overbuilt at a later time, and its true form cannot now be gauged, but it seems to have consisted of a narrow passage, flanked by walls, on which were two pairs of small round towers, the outer pair forming the actual gate-towers. The other pair probably had embrasures for cannon. There are traces of one in the northern tower (pl. VI, *c*), but it was altered in the Civil War for use with muskets, as was one at least of those in the round tower on the northern side of the castle.

The southern wall of Derby House for two-thirds of its height, i.e. up to the level of the first-floor ceiling, seems to be of masonry of this style; it is at least clear that it resembles no other style in the castle. There is a blocked window opening above the present doorway in this wall. It is impossible to draw far-reaching conclusions from this one wall, but it is at least possible that the house, which came later to be attributed to the seventh earl in 1644, was first built as the residence of the governor, *c.* 1540, when so much else was being done to bring the castle up to date.

During the reign of Elizabeth trade rivalry with Spain, particularly in the new lands in the west, led progressively to enmity with that country rather than with France. In due course war broke out, heralded rather than ended by the Spanish Armada of 1588. For some years before that event there had been fears of invasion, and preparations were made to meet it, although, as often appears to be the case in England, the last-minute dispositions may have been rather hurried.

It is probably in connexion with these preparations that the records of the earls of Derby have entries, under 1582/3, of expenditure as follows:[1]

p. to (various workmen) for breaking stones for the newe house at Castell and at Douglas and at the bulwarke and new wall by the space of 61 days	*22s. 4d.*
p. to two men for works done within the Castell and at the new worke the bulwarke and at Douglas by the space of 22 days	8*s.*
p. to workmen for works done in wallinge at the newe house, the bulwarke, and the walls at Scafflet	38*s.* 6*d.*
p. for rending my L: his closse ditches	4*s.*
p. to Gryndall for settinge uppe my L: his Armes in the new house, 6*s.* 8*d.* and to John Quirke for workinge with him by my L: his commandment	2*s.* 6*d.*
p. to (two joiners) for workes done at my L: his new house by the space of 34 days	11*s.* 4*d.*

Although the expenditure is not very high, this document certainly indicates the completion of the building—or at least rebuilding—of the lord's house in the castle and also attention to the fortifications, including the erection of a bulwark. The term bulwark of itself unfortunately gives no indication of type or style, whether of stone or timber, but there is no doubt that it was a fortification.

There is in the barbican a style of masonry, style VII, which both on the northern and southern outer faces seems definitely to be built against or over some of style VI, but which is yet covered by much work of style VIII, this last being plainly the latest in the castle before *c.* 1815. This style is of random limestone rubble and of all sizes except very large. Stones on end do not occur, as they do in style VI, nor are there so many and so obvious pinners as in that style. Sometimes there is rough coursing, but the most characteristic feature is the poor facing of many of the stones, which are often quite 'knobbly' and unlike any used for facework at other times in the castle. As the document of 1582/3 says, the stones have been broken, not dressed. The mortar is hard, white, and gritty, like that of style VI.

---

[1] For this information the writer is indebted to Mr. Philip Caine.

In the barbican this style forms the whole of the existing gate-towers except for the present parapet (pls. III, *c*, and X, and fig. 1). The original embrasures, now blocked, may be seen a little below the present summit of the structures. Walling of this kind occurs in the eastern end of the southern wall of the barbican. The western wall of Derby House seems also to be of this style up to the level of the ceiling of the first floor. There has been much later rebuilding or at least repointing of the house, but the stones up to that level seem to have the 'knobbly' appearance. The only other masonry of this kind is in the wall to the east and north-east of the castle beside the entrance to the harbour, which now in part forms the back wall of the Castle Arms Hotel (pls. IV, *d* and IX, *d*). This wall is undoubtedly that which is shown on old prints as the face of a bastion or bulwark, an outer defence of the castle (pls. I, *b* and II, *a*). Since these structures and walls, just described as existing, correspond so closely with the document of 1582/3, there need be no hesitation in ascribing them all to this period. It does, however, follow that Derby House was not built in 1644, as has been so frequently stated; no doubt it was then repaired and redecorated for the earl's use. It also follows that a bastion of the new kind, then recently perfected in Italy, could be built along with gate-towers which are purely medieval in appearance except that they are not very high. This is an unexpected conclusion, but instances of the time-lag in the science of fortification at this period can be quoted from other localities, e.g. the erection of Star Castle and Harry's Walls in the same year on St. Mary's, Isles of Scilly.[1]

In 1595, after the fifth earl's death, Elizabeth took possession of Man, pending settlement of the title, and, as she said, to prevent seizure of the island by English and Spanish refugees. Man was, therefore, ruled by governors until 1609, when settlement was made in favour of William, sixth earl of Derby and his countess, Elizabeth, although there is no record of any act by them in connexion with Man until 1612. The countess died in 1627. Her son James, Lord Strange, ruled Man, although his father was still alive; he later became the seventh earl of Derby.

In 1643 this James, earl of Derby, came to Man and but for brief periods was resident there until 1651. In 1649 Parliament summoned him to surrender; he refused. The island was granted to Fairfax, but no serious attempt was made to subdue it until 1651. A fleet was dispatched, but the earl's ships defeated it. Soon afterwards he himself crossed to England, taking with him three-quarters of the island's soldiers. He was present at the battle of Worcester, was captured and executed.

A Parliamentarian expedition under Colonel Duckenfield was then sent to reduce Man. The Manx rose under William Christian in favour of Parliament, and captured all the forts, but not Castle Rushen or Peel Castle, although they once obtained the latter. They planted cannon against Castle Rushen and won 'the outward half and tower' by treachery. At length the countess surrendered the castle, the last stronghold of the Royalist cause.

---

[1] *Official Guide to the Ancient Monuments of the Isles of Scilly*, 1949, pp. 20–1.

In its resistance to Parliament long after the death of the king, Man may be compared with the Scilly Isles, which also finally capitulated in 1651. In these islands batteries and other fortifications of the time of the Civil War are numerous, and it is, therefore, only natural to look for such earthworks also in Man. At Castle Rushen more recent encroachments have destroyed any which may have been constructed, but there are traces of such close to the round fort on Langness, and at Port Lewaigue, and at Ballacurry there is one of the finest earthworks of its kind in the British Isles.

At Castle Rushen, however, there remain certain additions in masonry to earlier structures, which were certainly built for military purposes and which by their character betray the necessity of speed. The style of work (VIII) consists of random limestone rubble, all small in scale and very confused and poor. A hard, white, gritty mortar is used copiously in the joints and on the surface as a rendering. This style occurs everywhere in the upper parts of the outermost part of the barbican and also above and behind the thin walling of style V in the middle part of the barbican (pls. VI, *c*, and X, and fig. 1).

Everywhere this addition was clearly made to gain height; older embrasures were blocked and new ones made at a higher level. This not only gave additional protection against shot from the besiegers, but also enabled the defenders to gain a better command of the ground in front of them. In particular it must have enabled them to fire over the heads of their own friends in the bulwark in front of the castle gate. Even to-day a glance will show that, but for this heightening, the bulwark would have blocked their view, not only of the water in front of it, but also of the opposite shore of the harbour. The same necessity, which compelled the fourteenth-century builders to raise the height of the keep, caused their descendants of the seventeenth century to raise the level of the barbican.

The masonry of the second floor of Derby House, which is set back considerably from the face of the work below, seems also to be in this style. Recent repointing has obscured many of the stones, but this seems the most likely period for its construction. Early engravings, which show dormer windows in the western side above the curtain, are in keeping with this ascription (pls. I, *b* and II, *a*). It has for years been taken as a gospel truth that Derby House was built in 1644 by the seventh earl, and a stone bearing that date is said once to have been found in it. This is, no doubt, the stone now in the Castle Museum. Reasons have been given above for attributing the lower two-thirds of the structure to different times in the sixteenth century, but there can be no doubt that the completion of the house to its present height is a work of 1644. The seventh earl put his date-stone on it in good faith as the restorer of the fabric, just as he put one into the Round Fort on St. Michael's Isle, which also had by then been standing for over a hundred years.

After the Restoration Man came again to the earls of Derby until the death, without heir, of the tenth earl. The island then passed to James Murray, second duke of Atholl. In 1761, towards the end of his life, there is a record of slight expenditure upon Castle Rushen and also of its garrison, viz. a constable, a lieutenant, an ensign, a gunner, a porter, 14 soldiers, 1 drummer, and 2 watchmen.

In 1765, however, the third duke of Atholl was forced to sell the island to the

Crown, and there is extant a report by the governor in June of that year in these terms:

> On outward walls houses containing Courtrooms and seven other rooms and two kitchens all out of repair.
>
> The apartments of the Earl of Derby the only place in which to quarter soldiers.
>
> Against the walls inside were the remains of three sheds, 40 feet long and 13 feet wide.
>
> These now to be made two stories high for 120 men. Accommodation for 160 altogether.
>
> No accommodation in the inner castle, save ruinous dungeons—the common jail of felons.
>
> Stables to be erected in the ditch (at present gardens), and soil in the ditch to be removed.

In 1766 the kitchens, cellars, and brewhouse were demolished to make room for the barracks, yet in 1779 Lieutenant-Governor Dawson said that no repairs had been done in the forts and castles since 1646. The guns were without carriages. Grose, *c.* 1775, refers to a 'fine chapel' near the governor's house, i.e. presumably on the eastern side of the castle. In 1789 a grant of £182 was made—or ordered—for the chapel in the castle: a gallery for the soldiers. Two years later Lieutenant-Governor Shaw said that the public buildings were in a deplorable condition. The garrison chapel was unfinished. The duke of Atholl soon after this stated that:

> The Castle of Rushen can only be called a pile of ruins. The very room in which I took my oaths of office and which is the only one in the Island where the Governors and Ministers justice is in such a situation that I every moment expected the fragments of the wainscoting would come tumbling down on my head. . . .
>
> . . . Some very indifferent barracks built where no man in his senses would ever have placed them in the Ditch of the Castle. . . .

There follow some most informative documents which illustrate the transformation of Castle Rushen from a half-ruined medieval castle into a prison, and it should be said at once that it was this use which preserved it for our benefit.

1813 (H.O. 98. 68). Letter on Derby House, from John Taubman, Speaker:

> The present residence of the Lt. Governor on the ramparts of C. Rushen was an armoury a storeroom and rooms of public entertainment. It had been the residence of the Derby family when they visited the Island.
>
> On the arrival of the troops after the Revestment it was cleared repaired and converted into quarters for the officers, Barracks being at the same time built within the same ramparts for the troops. The officers' quarters were repaired and improved by Lt. Gov. Dawson.

1813 (H.O. 98. 68). Letter from the duke of Atholl:

> Since the Revestment the only alteration is the pulling down of some Barracks which were built on the Castle Ditch soon after the Revestment with materials mostly taken from unroofing and otherwise dilapidating the old Castle which was then completely roofed and covered with lead and part of which in their turn had been pulled down and converted with some trifling alterations into a building on the walls now called the Gov. House erected originally in the time of Chas I as a refuge for the Countess of Derby. . . .
>
> At present the old Castle is in a progressive state of decay and dilapidation occupied for two imperfect magazines for powder in charge of the Ordnance Storekeeper and two damp and unwholesome Dungeons for felons.
>
> This building, called the Inner Ward, roofed in and leaded in 1765, in 1795 was ruinous, with no roof or flooring of any kind.

Present gaol under Courtroom and partly under Gov. House.

Three small buildings on the walls—one for the Records, and two for Debtors of superior description.

Common Gaol, three small rooms—the largest 19½ feet by 13 feet—in a deplorable state.

No accommodation for gaoler, turnkey, and the necessary officers, who quit the prison at night, the prisoners being guarded by a sentry on the outside.

The powder in the magazine aired on the leads of the turrets ('in the middle of a town where the only mode practised for cleaning chimnies is to set fire to them'). It was coagulated and useless owing to damp.

—Atholl.

1813 (H.O. 98. 68).

Repairs:

60 yds ground floor stonewalling to partitions and openings
50 ,, ground floor lath and plaster
350 ,, ,, ,, stopping and pointing
40 ,, stone walling
1500 ,, superfic. stopping and pointing turrets and external wall
480 ft. Spanish Head stone ceiling at 1/- foot
750 ft. Yorkshire flag to roof.

May 1816 (H.O. 98. 68). Letter from Atholl complaining that Capt. Holloway, Engineer officer sent by War Office, had gone to too much expense in jail alterations:

> unneccessarily mutilating the old building and taking off the roofs of Towers which would have stood for ages, selling the wood and lead for almost nothing.

June 1816. In June, however, the duke withdrew his strictures on Holloway, confessing that the old roofs were in a state of decay and 'the thick wall' in great dilapidation.

1827 (H.O. 98. 75).

476 yds cube rubble stone wall at 5/6	130 ″ 13 ″ 0
95 ft. sup. 2″ oak doors in two thicknesses lined with sheet iron and dognailed, at 2/3	10 ″ 13 ″ 9
360 lbs. wt. wrought iron in guards, at 5*d*	7 ″ 10 ″ 0
175 ft. Spanish Head stone steps, landings, ceilings to doors and openings, at 1/-	8 ″ 15 ″ 0
72 cub. yds ground excavation, at 6*d*	1 ″ 16 ″ 0
Breaking, opening, etc.,	10 ″ 0 ″ 0
36 yds. painting, at 9*d*	1 ″ 7 ″ 0
	170 ″ 14 ″ 9

Architect: Thos Brine

[There are sketches with the 1827 Architect's plans, to be found in H.O. 98. 75, in the Public Record Office.]

The following extract from an unpublished, illustrated 'Tour through the Isle of Man in July 1815' by Capt. Latham and W. Walmsley, preserved in the Manx Museum Library (MS. 296. A) is of interest in this connexion:

> (Castle Rushin) . . . It is now undergoing a thorough repair under the direction of Mr. Bryan its governor who very politely shewed us thro' it. Here may be seen specimens of the stone

procured at Spanish Head: large blocks 17 ft. long supply the place of Timber for flooring the cells. . . . The Bell on the southern battlements appears from the Inscription to have been cast by Luke Ashton of Wigan and has upon it in raised letters 'James Earl of Derby'.

These documents[1] show that a great deal of work was undertaken in two spells, 1813 onwards, and *c.* 1827. The many yards of stopping and pointing can be identified in many parts of the castle by the particular mortar used, brown Roman cement, which was much in vogue early last century. The Spanish Head stones are also apparent, especially in the floor of the first-floor room on the west side of the keep, and in the floor of the second-floor room in the gatehouse, where they partially block the portcullis grooves. The staircase in the south-western corner of the keep is also very plainly of this period,[2] whilst not a few of the prison doors are still in use.

Besides these items there is much rebuilding or refacing of older work, which it seems feasible to equate with the rubble walling of the lists of 1813 and 1827. As will be mentioned below, Armitage Rigby, the architect who restored Castle Rushen under the aegis of the late Lord Raglan, made a complete survey of the castle, and it is clear by comparison with the present structure that the survey was made before he started his work. It is, therefore, more valuable than would have been his survey after work, because it almost certainly shows the castle as it was when in use as a prison. With this survey in hand it has been possible to identify the work done on the keep *c.* 1813–27, and it is considered advisable to record it here in detail.

Three passages were cut right through the solid ground story of the south tower in order to give access to airing grounds for prisoners in the courtyard. Openings were also made through the eastern wall of the keep north of the eastern tower, and through its western wall north of the western tower, through the southern wall of the keep west of the southern tower, and through the western wall of the inner gatehouse. In the inner gatehouse all four ground-floor windows were enlarged and new doorways were cut from the guardroom to the actual gate passage-way. The present stair in the court to the first floor was built at this time, and the present flat-headed windows were inserted on ground, first, and second floors. In the first floor of the southern tower the existing window in the western wall has jambs, which were probably put there in this period, and farther south there was another light—no doubt introduced at this time—which Rigby blocked.

In connexion with the stair in the south-western corner of the keep much new walling or refacing was built in the western and southern sides of the keep, as marked 'modern' on the plan. There was also a north–south wall near the western end of the southern store-room on the ground floor, removed by Rigby, which was probably a prison wall, as is the present ground-floor facework on the eastern side of the keep. The party walls on ground, first, and second floors north of the prison stair in the south-western corner of the keep are straight-jointed against the main north–south walls, and on the first and second floor they may be of the prison period, but they have doorways with shouldered lintels, which look new and are unlikely to have been made at that time. Presumably they were inserted by Rigby.

---

[1] For this and for information concerning eighteenth-century documents the writer is indebted to Mr. David Craine.

[2] Formerly shown to visitors as the stair of the kings of Man !

Above the second floor the only certain or probable works of the prison period are the floors and the roofs. The bell on the southern tower turret bears the name of James, earl of Derby, and the date 1729.[1]

At about this time the only ashlar in the castle was used, not only for a new front door to Derby House, but also for a new façade added to the upper part of its east wall (pl. IV, *d*). The court room was refitted in Neo-Gothic style.

As already mentioned, the late Lord Raglan, when he was lieutenant-governor, initiated repairs and restoration at the castle, which brought it to the state in which it is seen to-day. His architect was the late Mr. Armitage Rigby, F.R.I.B.A., who was assisted by the late Mr. W. H. Kermode, F.S.A., F.R.I.B.A. Rigby's survey is preserved in the Manx Museum, but, so far as is known, has not been published. It is plainly a survey before he began work. Rigby's alterations have been measured and incorporated by the present writer; otherwise the plans accompanying this paper are those of Armitage Rigby. By comparing Rigby's original plans with the present structure it is possible to learn exactly what work he did, and it is thought desirable to set it down for future reference. The work is notable for its unpleasant grey pointing, but is otherwise of excellent quality and is unobtrusive, as good restoration always should be.

Rigby mainly concerned himself with undoing the harm done by the prison builders, such as clearing buildings and debris from the courtyard, but he did not eradicate any of their work which seemed useful, such as the prison doors and, of course, the floors and roofs. He also left the internal prison windows, but he replaced those on the outer face by remaking the splays and chamfered surrounds in medieval fashion. Thus the ground-floor and first-floor windows in the gatehouses are his work, as is the first-floor window in the southern wall of the keep east of the south tower, where he discovered the adjacent curious opening. He also unblocked and remade the western window in the northern wall of the same room. Rigby is no doubt responsible for many of the actual sashes and panes of 'bottle' glass. He certainly blocked the various openings and passages cut by the prison builders through the main wall of the keep, which have already been detailed.

Minor works, which may be attributed to Rigby, are the raising of the walls flanking the drawbridge pit, the blocking of the doorways cut from the guard chambers in the inner gatehouse to the gate passage, the blocking of a small light of prison period in the western wall of the first floor of the south tower, the restoration of window-seats in the embrasure of the window in the eastern wall of the same tower on the first floor, and probably the insertion of doorways with shouldered lintels in the cross-walls north of the stair in the south-western corner of the keep on the first and second floors. On the fifth floor of the inner gatehouse in the northern parapet there are two cross-slits. Rigby's plan marks the inner parts only of the splays. He completed the slits and cut the date 1906 on each. Finally, on the fourth floor of the inner gatehouse the southern wall has three windows, which by their width suggest alteration of the outer part in the prison period. They now have curious heads formed of very weathered blind tracery of late medieval character. Rigby's plan does not agree in detail with the present condition of the splays of these windows, and there is present some of his distinctive pointing. It is very probable that he reset all these windows, introducing the traceried heads from elsewhere. They cannot, therefore, be used for secure dating of this part of the castle.

---

[1] The present writer has not seen the date. The bell is difficult of access, but it certainly seems to have decoration suggestive of 1629 rather than 1729.

In the outer gatehouse Rigby removed a few partitions of the prison period, and remade four small windows in medieval fashion as well as blocking one forced opening in the northern wall. He found a vertical shaft in the dividing wall, which gives access to the store and mill below, and remade the wall recess to contain it. He also remade two fireplaces in the outer gatehouse, dating the western one 1910, and remade the inner part of the entrance arch behind the portcullis. In 1905 he found the stair to the curtain on the west side of the outer gatehouse and opened six adjacent embrasures which had been blocked. The large opening in the curtain at about the centre of the barbican is his work, as are the two portcullises in the inner gatehouse. That in the outer gatehouse is original.

DESCRIPTION OF THE CASTLE

It is not proposed here to give a complete description of the castle, since this has been very largely given already in Rigby's *Castle Rushen*, but a few words may not be out of place in description of those special features which make Castle Rushen famous amongst British castles.

A. The Castle in A.D. 1400

Military. An attacker approaching the castle would find before him a wide and deep ditch, beyond which stood a high curtain. On the side where the ground stood highest outside the castle there projected from the curtain a series of small towers, giving covering fire from bows through slits shaped like dumb-bells. This high curtain was built as a defence against improved siege engines which threw missiles with a high trajectory, and behind it stood a keep, recently heightened to provide covering fire over the curtain. The attacker, if he flinched from a frontal attack and moved to the more vulnerable entrance, found it placed almost directly on the beach, where his foothold might be insecure. Moreover, he would be forced to advance along a narrow passage or barbican so constructed with an angle that he could not use a long battering-ram and was subject in any case all the time to missiles from the wall-tops on each side of him. In front here, of course, lay a turning-bridge, of the sort to be described later, and a portcullis. Supposing these obstacles to have been forced, the attacker would be in possession of what is now the ground floor of the outer gatehouse, but he would still have no access to its basement, which was entered only from the courtyard below and could only gain the first floor and the roof by ascending a spiral stair.

There was no masonry obstacle to hinder access to the adjacent part of the courtyard so far as can now be ascertained, but it is clear that possession of one part of the courtyard did not imply possession of the other parts, since they were shut off from one another by walls, in which no doubt there were once narrow doorways. The evidence at Castle Rushen for these walls is rather slight, but is definite. There are 'tuskers' of such a wall in the inner face of the curtain opposite the west tower of the keep, and the lowest courses of such a wall almost as far as the keep. There seems once to have been a similar wall east of the keep. Such walls, to divide up the courtyard and so to prohibit an enemy, who had forced the outer gateway, from running at will all round the courtyard within, are to be seen at Aberystwyth and Caerphilly Castles, in the late thirteenth or early fourteenth century. At Castle Rushen a short prolongation of the wall of the drawbridge pit of the keep toward the outer gatehouse on the curtain would have provided another dividing wall in the courtyard, and would incidentally have prohibited access to the only stair to the wall-walk on the curtain, but of such a wall there is no evidence. The only other method of reaching this curtain was—and still is—from the first floor of the outer gatehouse, which itself, as already mentioned, was reached from below only by means of a spiral stair. An enemy who forced this gatehouse and came out in the courtyard stood in danger of annihilation by the defenders on the wall-walk of the curtain, who were themselves protected by parapets from missiles within as well as without. An internal parapet of this kind occurs in the Edwardian castle at Beaumaris in Anglesey.

Supposing an enemy had captured the curtain as well as the outer gatehouse, he had then before him the formidable keep with insufficient room within the courtyard in which to prepare a mine, without elaborate precautions against interference by the defenders. In front of him was a turning-bridge and two portcullises as well as doors. They are all of normal type, but, as there still exists at Castle Rushen much detailed evidence of their working, it will be described in full. The turning-bridge was pivoted on a horizontal axle, and it is clear that the weight on its inner end caused its normal position to be vertical, i.e. closed. Attached to this inner end there was a chain or rope, which led along a horizontal channel under the fairway of the entrance passage to a shaft, set in another horizontal channel like the first, but at right angles to it. This shaft extended to the eastern side of the inner gatehouse, where it ended in, or was attached to, a wheel in a built recess in the wall. All these channels, etc., still exist, and make it clear that by turning this wheel the inner end of the turning-bridge could be raised, to permit entrance to or exit from the castle. No doubt, when it was horizontal, the platform of the bridge was bolted to a rigid part of the structure.

The arrangements of the portcullises are even more interesting. Their slots extend right up to the third floor of the inner gatehouse where can be seen the square recesses for the axles on which the ropes of the portcullises were wound. Incidentally the presence of a flagged floor partly blocking one pair of portcullis grooves in the second floor shows that the flagged floors are no part of the medieval castle. At the top of the inner portcullis groove, however, on the third floor, there are two unusual features. Close to the western end of the slot there is a narrow hole, edged with sandstone, through the outer (southern) wall of the room, whilst close to the eastern end of the slot there is a similar hole right through the eastern wall of the room into the next room, a room which can only be reached independently from the wall-walk. These slots are circular and very close to the floor. No other explanation seems so feasible as the one that they were for ropes attached to the portcullis. The portcullis may have been an unusually heavy one. At any rate it seems that haulage in the normal manner was supplemented by means of pulling on one rope in the next room on the third floor and on another rope which dangled down the southern side of the inner gatehouse to the ground below. Signs of wear at the ends of these slots support this suggestion.

If an enemy forced all these formidable defences of the inner gatehouse, he still would have possession only of the ground floor of the keep. The main apartments in the south and west sides were reached only by means of an external stair to the first floor entrance, which was no doubt of wood and moveable. The upper floors of the inner gatehouse itself were all accessible from a single spiral stair, which begins close to the entrance passage, but with the exception of one doorway (first floor), which Rigby considered to be a later insertion (*v.* p. 8), there is no access from this gatehouse to the main apartments short of the roof. Truly this, like so many medieval castles, was as perfect a fortification of its kind as it was possible to make. Only a new eapon could beat it.

Domestic. The separation of the rooms in the inner gatehouse, where no doubt the *élite* of the ordinary garrison would normally be stationed, from the remainder of the keep has just been mentioned. This separation was not only a precaution against an external foe who might have forced the entrance and won that gatehouse. It was also a precaution against internal defection, necessary at a time when the feudal lords had come of necessity to rely more upon paid warriors than upon the feudal array. There is no need to labour the point here, since it is one which Dr. Douglas Simpson has made his own in a series of able papers on 'Castles of Livery and Maintenance'.[1] Castle Rushen certainly seems to exhibit yet another example of this type of arrangement, although it is strange that the lord of the castle did not keep the entrance into the keep under his personal control, as was done at Harlech and other Edwardian castles in North Wales. The earlier planning of the keep may have prohibited this.

In the principal apartments, which range along the south and west sides and east tower of the keep, an attempt was made to accommodate a normal medieval house. On the first floor there was the kitchen in the east tower; a buttery is presumed under a pent roof against the east wall, where a row of corbels is visible; the hall is along the south wall with a small room off it in the south tower. So far as can now be judged, along the west wall there was either one long room, or two smaller rooms, with a small room off it in the west tower. The second floor is reached by means of a spiral stair, which is contained in the thickness of the wall between the kitchen and the hall, starting at first floor and going to the roof. The second-floor rooms are arranged precisely as those below, save that there is no kitchen in the east tower and that the room in the south tower was the chapel, since there is the seating for an altar table in a window recess before the only decorated window in the keep, which is certainly *in situ*. The duplication of these apartments upon the two floors is unusual, and it may well be, as Castle Rushen was the main seat of a kingdom, that the lower suite was in use for state apartments, whereas that on the second floor was normally used by the king or lord of Man or his chief representative. An alternative suggestion is that the lord's rooms were on the first floor with those for guests above.

---

[1] See especially *Journ. Brit. Arch. Ass.*, 3rd Ser., iv, 39–54.

B. The Defences of c. A.D. *1540*

By this time a new weapon had made its influence felt. Cannon, first figured in a manuscript of 1326, and already used freely for siege warfare whilst Castle Rushen was still being built in the fourteenth century, yet took a long time to influence military architecture in a radical manner. By 1540 developments in fortification were, however, following one another in rapid succession.

In that year, if an attacker had arrived before the Castle Rushen of A.D. 1400 with a siege train of cannon, such as was available to him in England, instead of being dismayed by the height of the curtain, he would have rejoiced to think that its very height presented him with a first-class target at point-blank range. From the opposite side of the ditch, or even from farther back beyond the range of the defenders' hand weapons, he could hardly miss such a target, and, although the wall was thick, continued battery would be likely to make a breach. Once breached, the more debris there was the better he liked it, since it provided cover for storming parties.

The counter to this advantage which high walls presented to the attack was, of course, to make walls lower and thicker—so to speak to sink into the ground. This was the system employed in the new fortifications of this period, e.g. Henry VIII's castles along the south coast of England. But, in order to adapt an older castle to the new method, it was necessary to mask the high curtain with new work, so that it could not be battered at close range. This was done at Castle Rushen by the addition of a glacis or counterscarp, as it was sometimes called. It comprised a large bank of earth, completely encased in stone, laid round the east, south, and west sides of the castle, over the outer half and the counterscarp of the earlier moat. This glacis had a vertical revetment at its inner side and sloped gradually away from the castle to a low front revetment wall. The glacis served a double purpose. An attacker could now only fire at the curtain with high trajectory shot, and the defenders' musket shots, aimed at attackers just beyond the glacis, if they fell short, would ricochet off its stone surface and still do damage. Although the surface is now grass, the painting of 1815 (pl. II, *d*) clearly shows that it was paved.

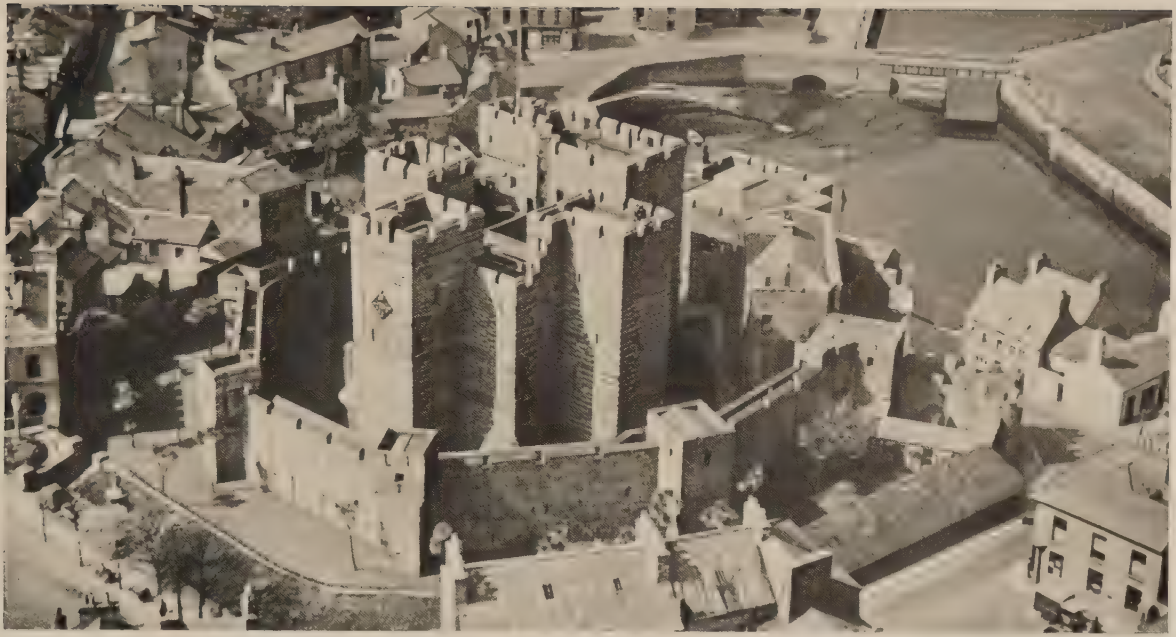
In the glacis there were sundry horizontal passages and slits for musketeers or cannoniers, from which they could afflict the besiegers. The outlets of these have all been blocked by the cutting back of the outer edge of the glacis and by the substitution of grass for stone on its surface, but the position of one of them is shown on the plan (fig. 1). There were also three round or D-shaped towers on the line of the glacis. One of these, the northern, remains. It has a corbelled-headed doorway opening off the moat, and at ground-level originally had three gun-ports, splayed both internally and externally in the manner of the sixteenth century. Two of these have been completely blocked or removed, but the start of the inner splay of the eastern example remains, although all the rest of it has been destroyed, when the existing double musket loop was made, probably during the Civil War (pl. VI, *d*).[1] The guns in these gunports must have given command over the harbour and normal landing-place. Glacis of this kind must once have been very common, but they were subject to alteration, since they soon became obsolete, or to removal, because defences were no longer needed, and the writer knows of no other extant example in the British Isles.

---

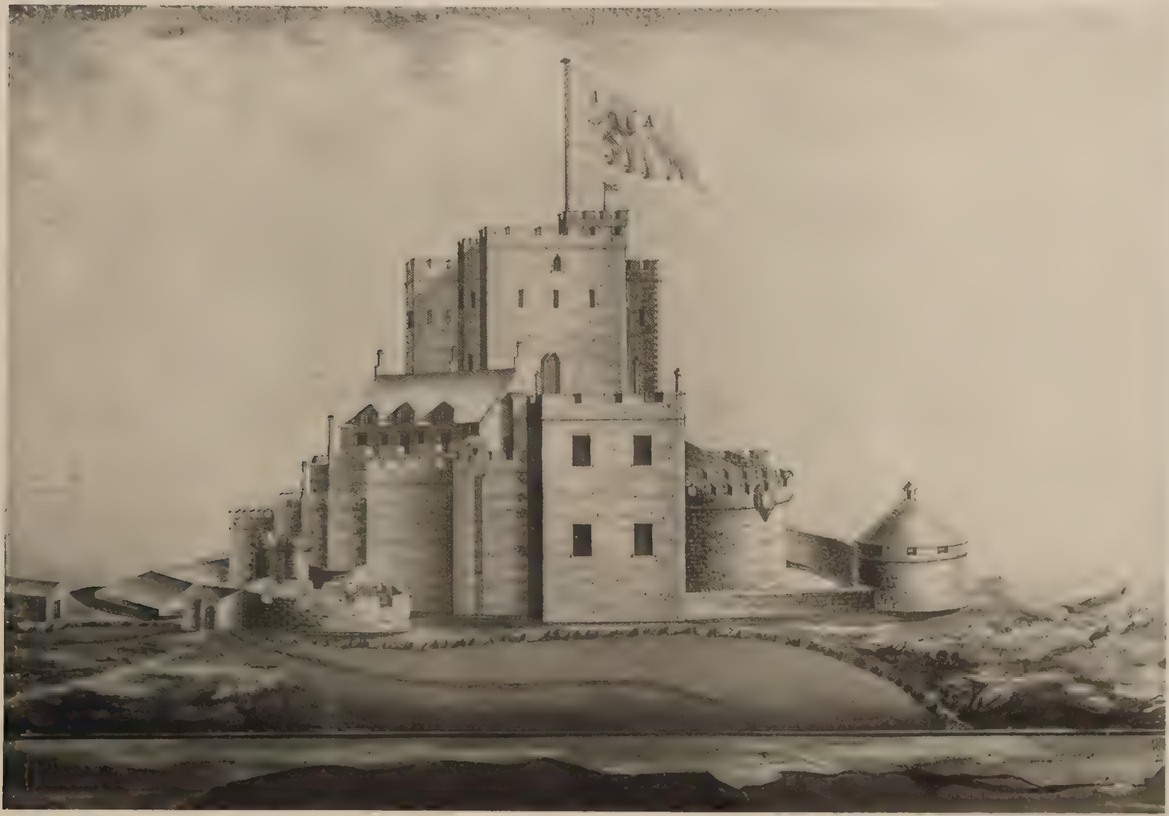
[1] Incorrectly shown on the plan as entirely of the seventeenth century.

ACKNOWLEDGEMENTS

First and foremost the writer must express his gratitude to the Manx Government and to the Ministry of Works, who respectively suggested and agreed that he should prepare an archaeological report on Castle Rushen. It was this suggestion which caused him to see the castle and which led to a desire to exhibit its interesting points to other students. All the illustrations here given are reproduced by permission either of the Ancient Monuments Trustees of the Manx Government or of the Ministry of Works and the Controller of H.M. Stationery Office, except the air photograph, which is by permission of Mr. T. H. Royston and Plate IV, *a* which is by permission of Mr. H. G. Leask, Hon. F.S.A. Mr. B. R. S. Megaw, F.S.A., Curator of the Manx Museum, has been unfailingly helpful in many ways, as has Mr. J. N. Panes, Government Secretary and the other Government Property Trustees in whom the castle is vested, and His Honour the Deemster Farrant. For transcripts of documents the writer thanks Mr. David Craine and Mr. Philip Caine, as also Professor G. Bersu, Hon. F.S.A., for assistance with the plan, and Mr. C. A. Ralegh Radford, F.S.A., for an interesting discussion of problems on the spot. Above all he must again pay tribute to his predecessor, Rigby's, work, and confess that, had it not been for the latter's death before he could revise his written work, this study would have been unnecessary.



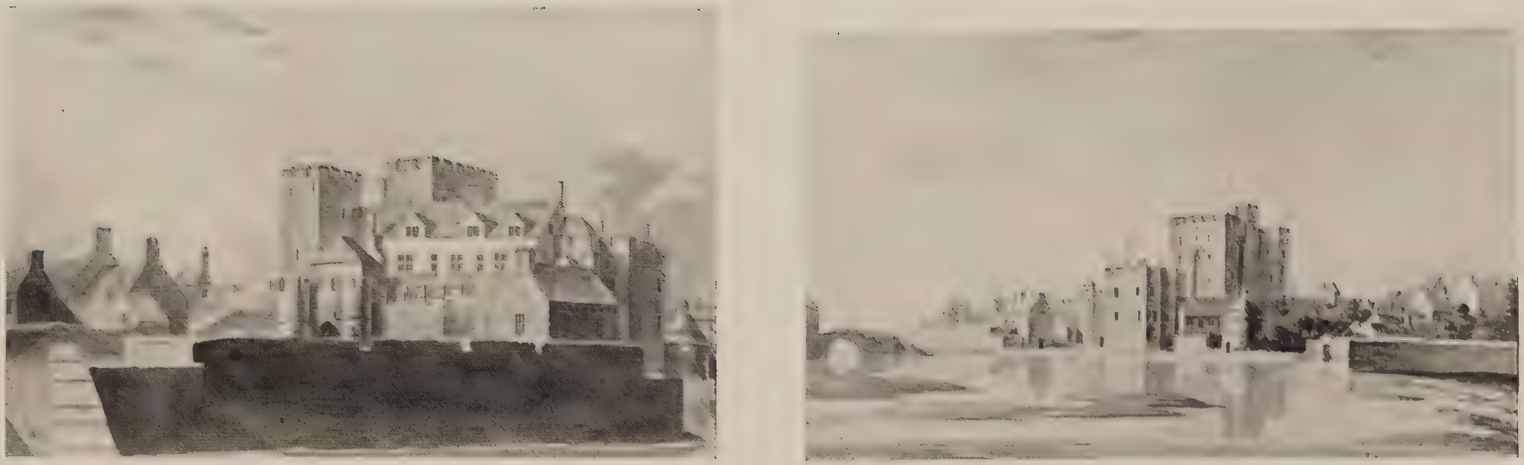
a. An air view of Castle Rushen from the south-east



b. Castle Rushen, 'A North-Eastern View Thereof, taken from the River', inset in S. Fane's plan, *c.* 1760
Original drawing in the Manx Museum

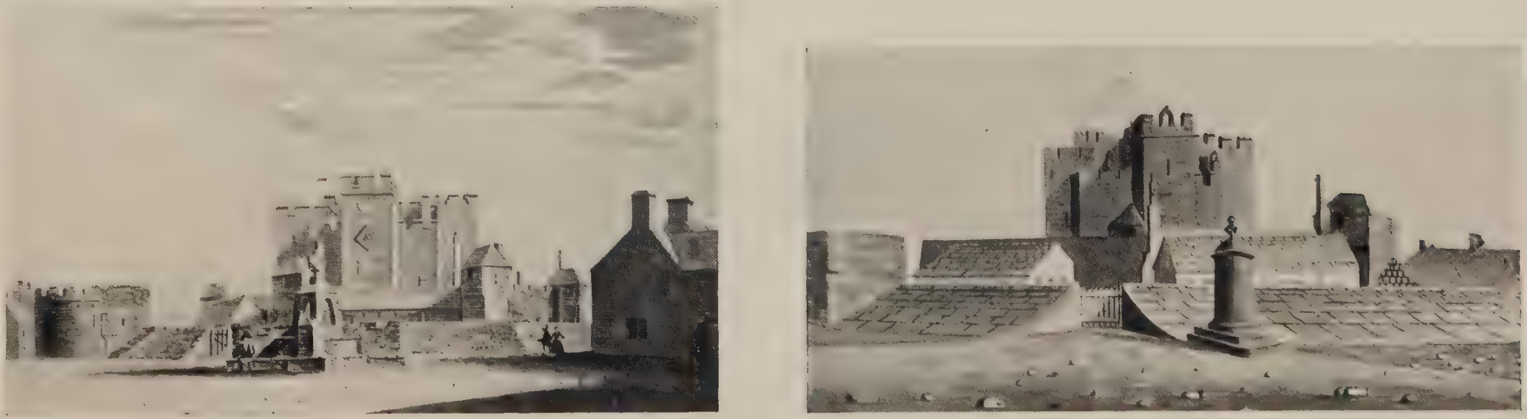
Published by the Society of Antiquaries of London, 1951

PLATE II



a. Castle Rushen from the west; 1774

b. Castle Rushen from the north; 1774

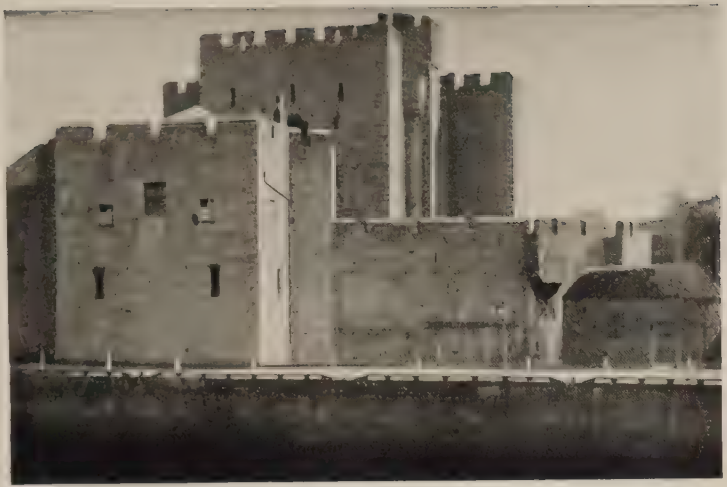


c. Castle Rushen from the south; 1774

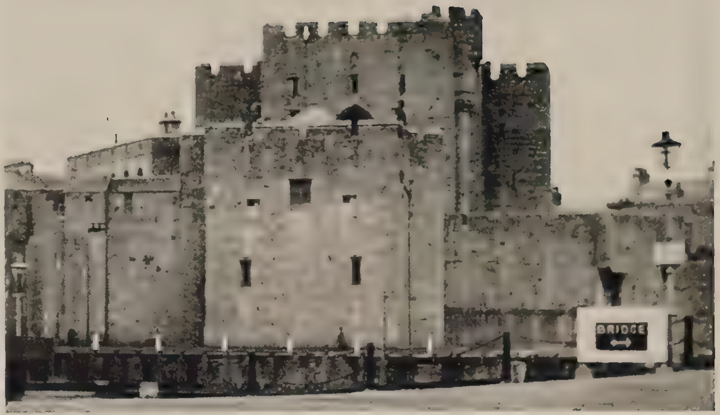
d. Castle Rushen from the south; 1815

From the originals in the Manx Museum

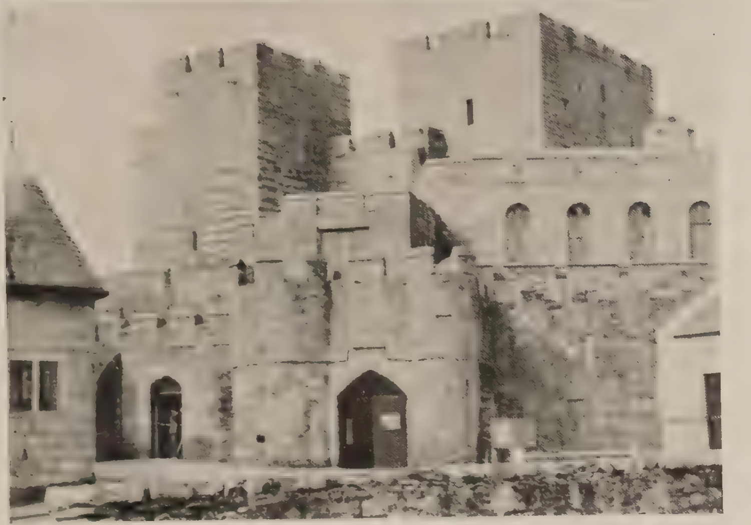
Published by the Society of Antiquaries of London, 1951



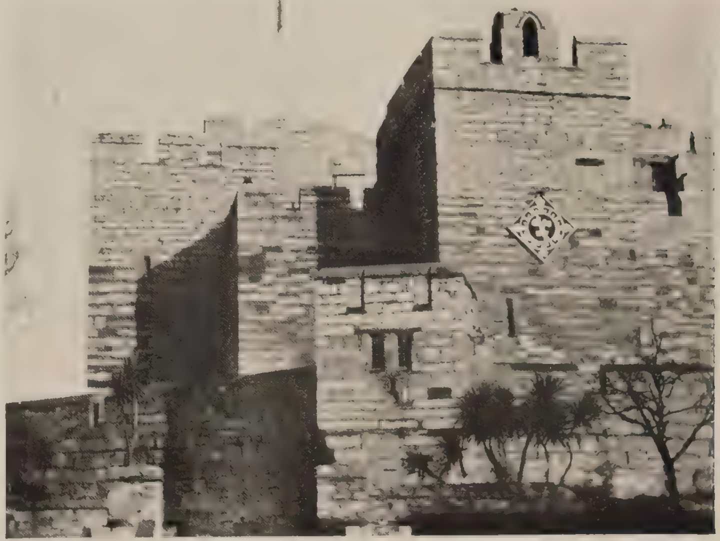
a. Outer Gatehouse, Keep, and Round Tower from the north



b. Outer Gatehouse and Keep from the north

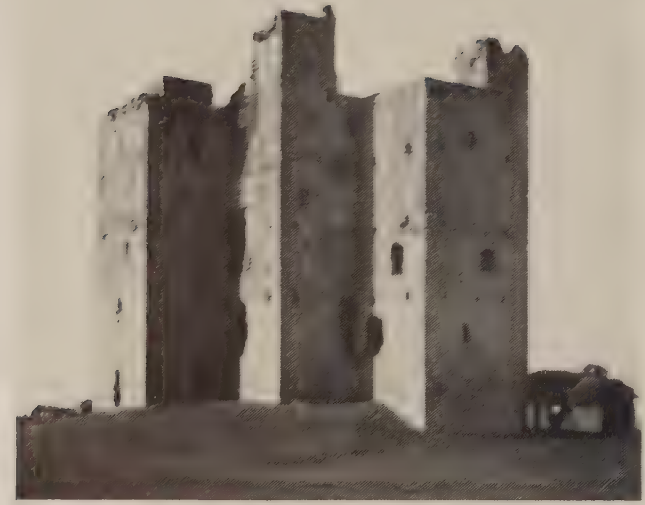


c. Barbican and Keep from the east

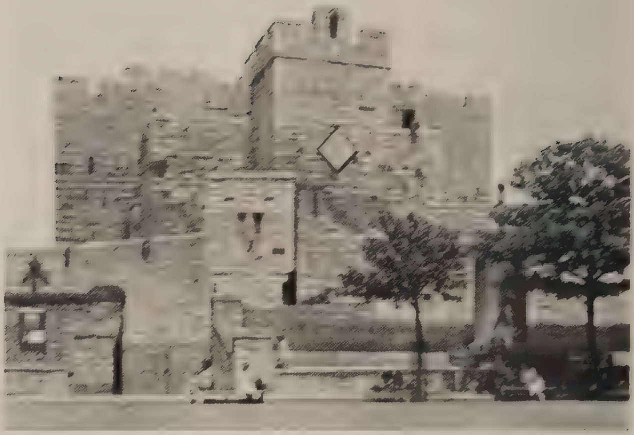


d. Keep and Curtain from the south-west

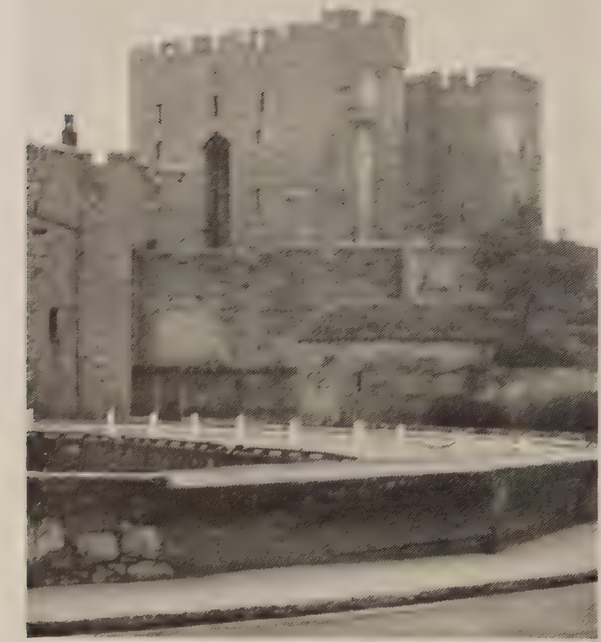
Published by the Society of Antiquaries of London, 1951



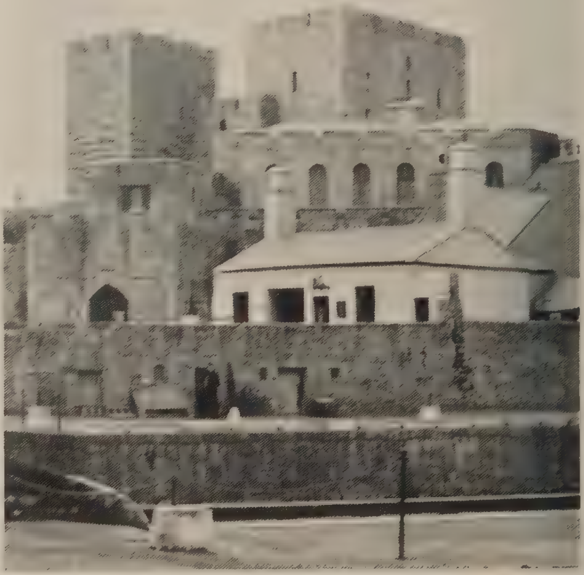
a. Keep of Trim Castle, Co. Meath, Ireland



b. Keep from south

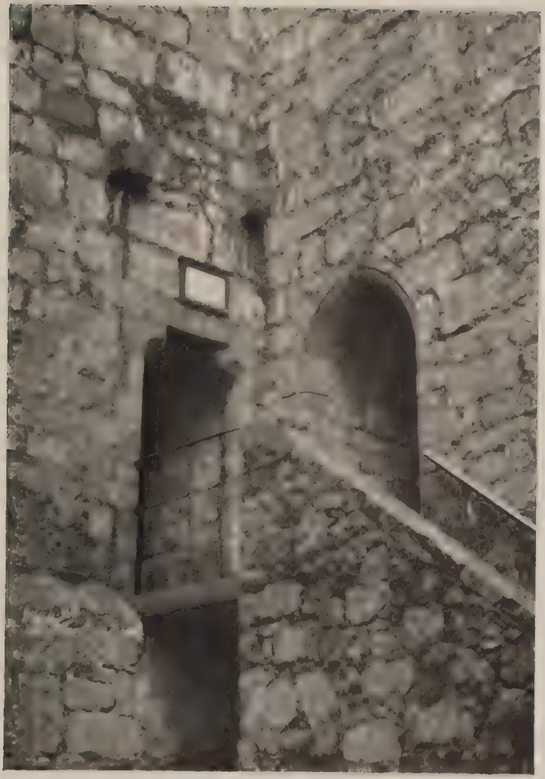


c. Keep from north-west

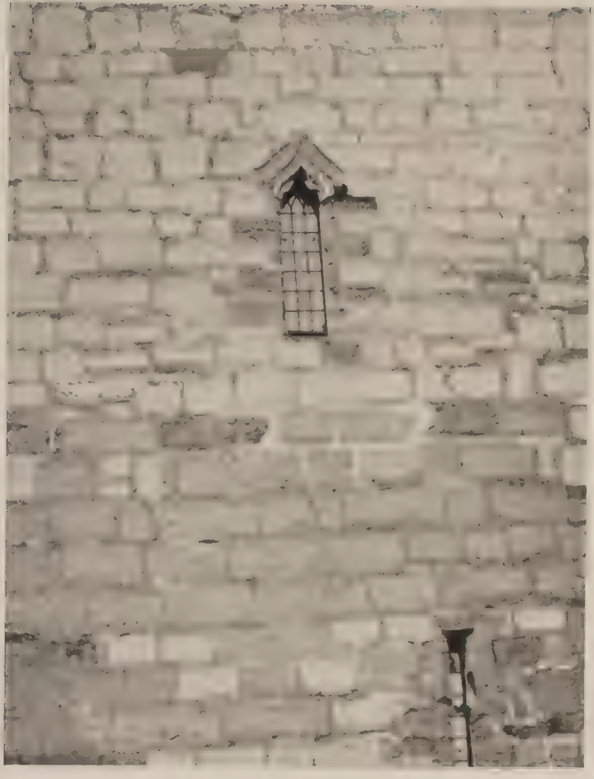


d. Barbican and Keep from north-east

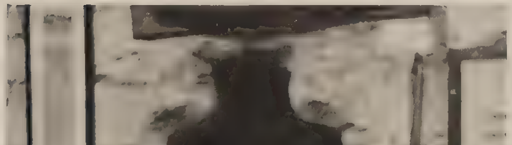
Published by the Society of Antiquaries of London, 1951



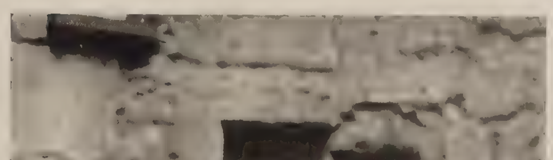
a. Doorways at first-floor level of Keep



b. Window at second-floor level of South Tower of Keep (Style IV below)

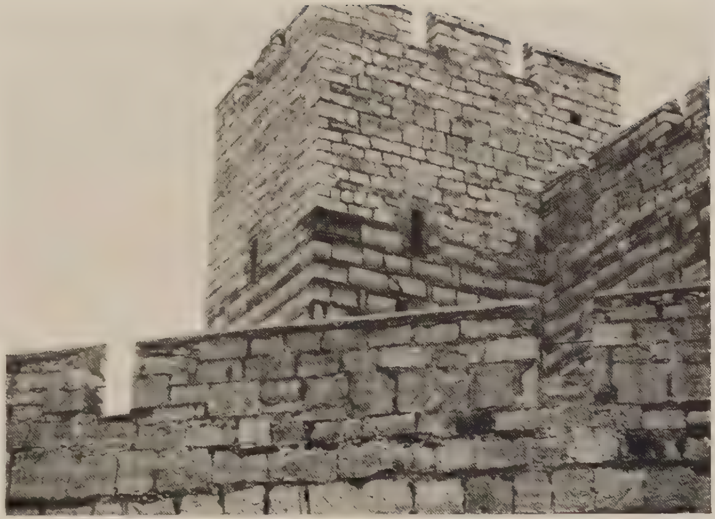


c. Doorway in Museum on second floor of Keep

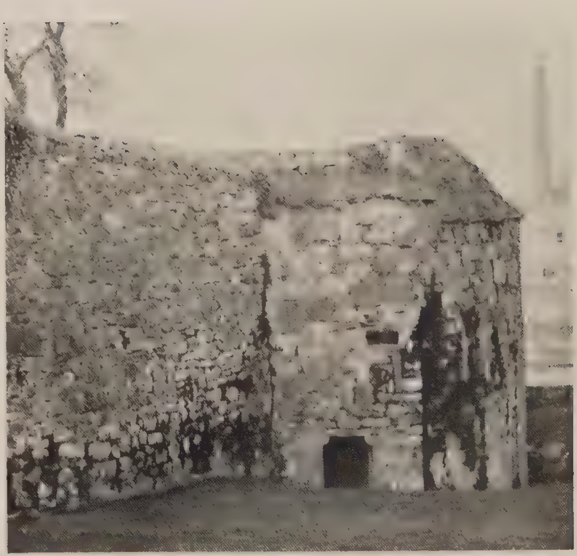


d. Doorways at ground level of Keep, north-west corner

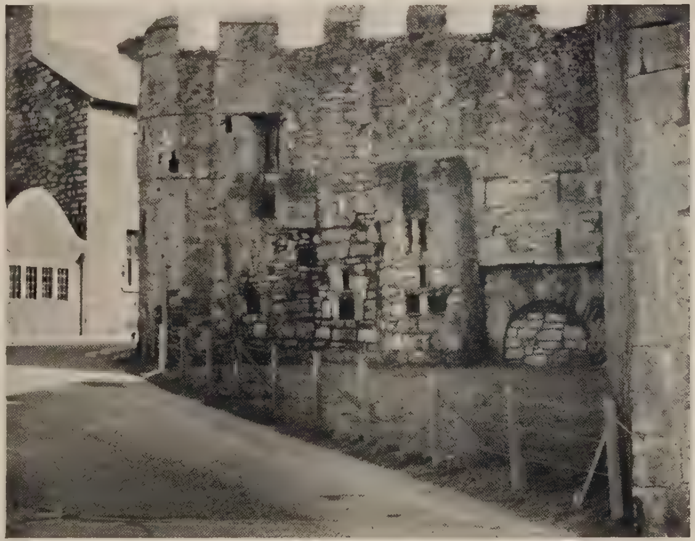
Published by the Society of Antiquaries of London, 1951



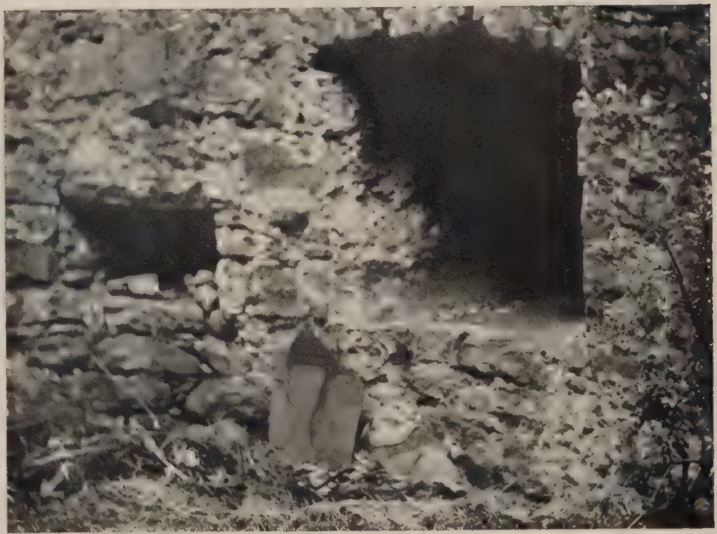
a. West Tower of Keep from south-west



b. Round Tower from south (Style VI)

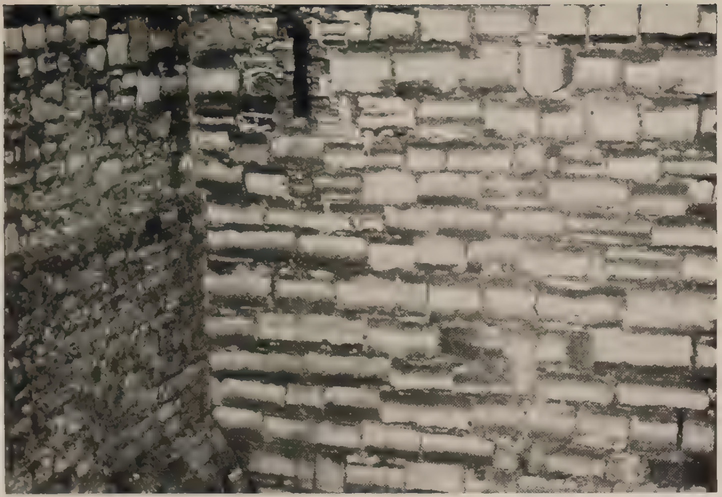


c. Barbican from north (Styles VI, VII, and VIII)

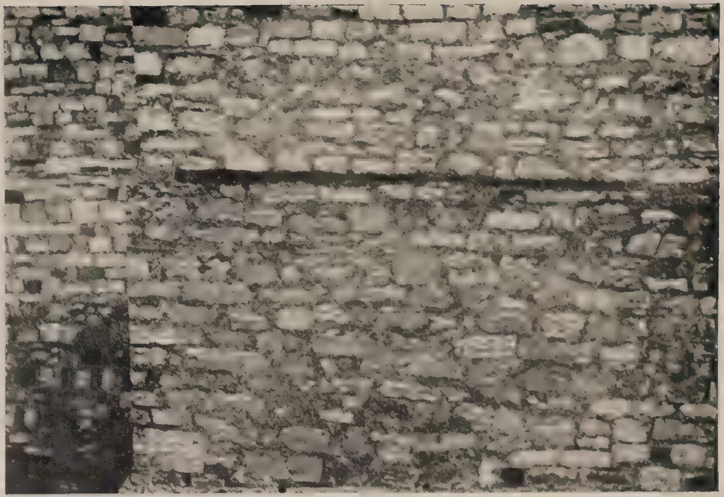


d. Gunport in Round Tower from within

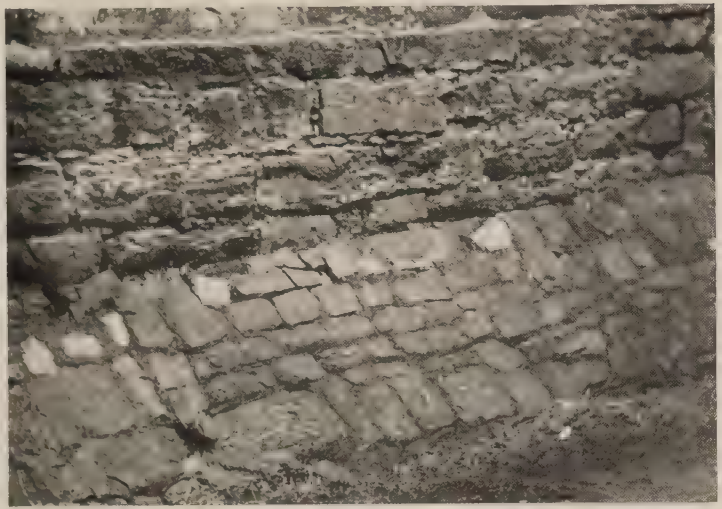
Published by the Society of Antiquaries of London, 1951



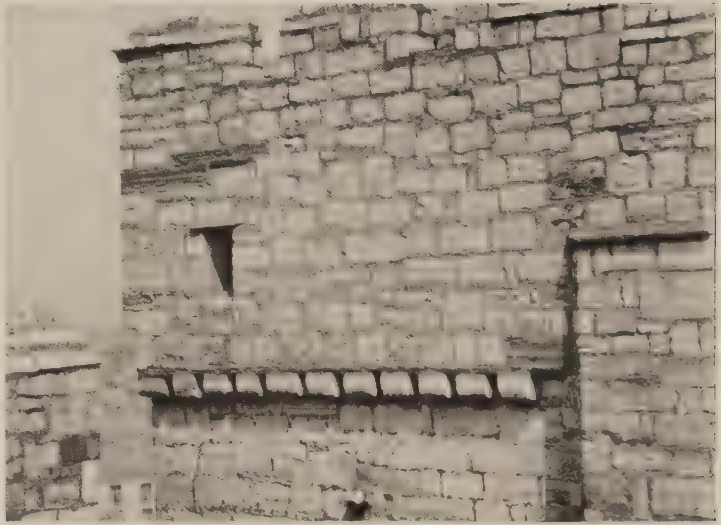
a. Base of East Tower and east side of Keep from south-east (Style I to left, Style III to right)



b. Base of south part of east side of Keep (Style I with offset)

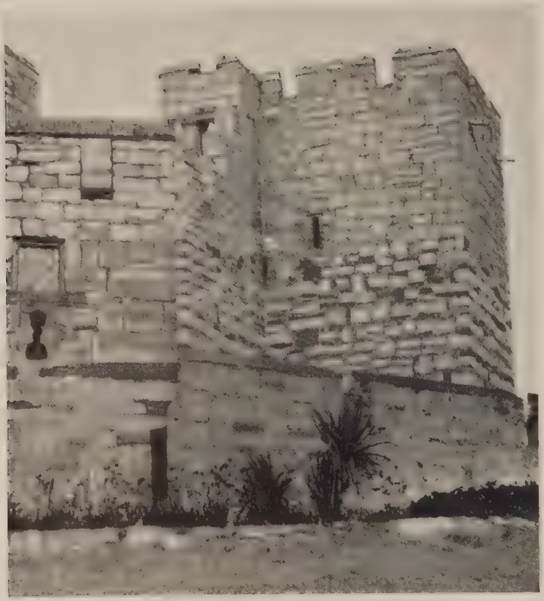


c. North-east side of forebuilding (Style I with modern batter below)

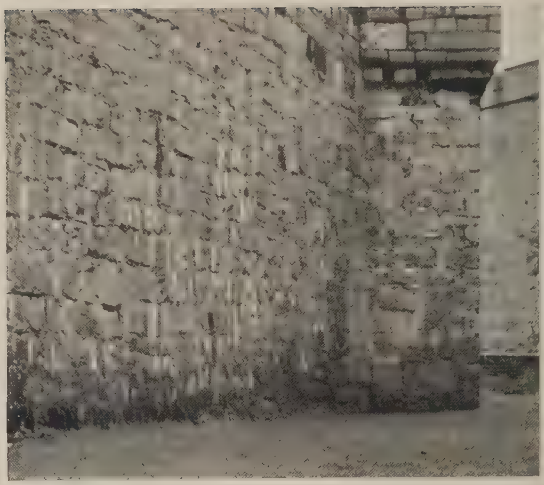


d. Summit of Keep (Style V)

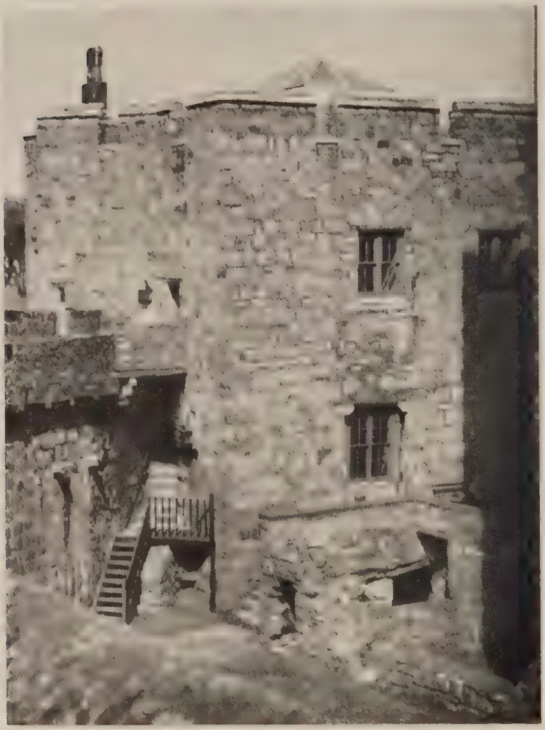
Published by the Society of Antiquaries of London, 1951



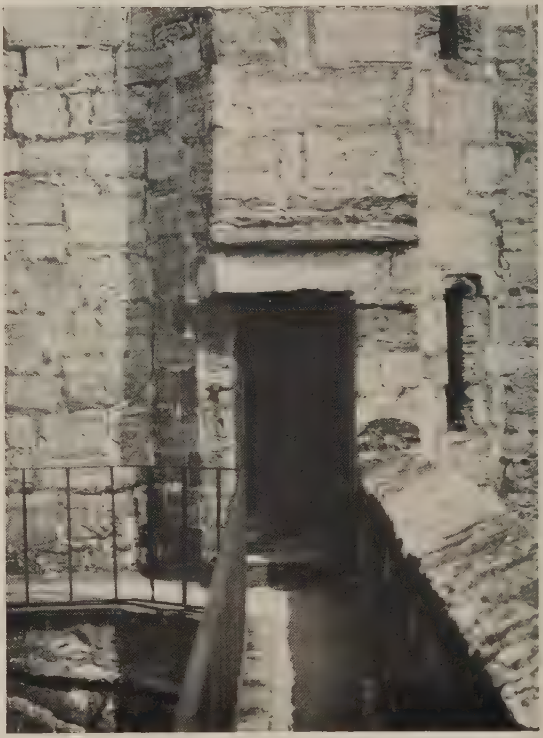
a. Curtain and East Tower of Keep from south-east



b. Exterior of Curtain, west side

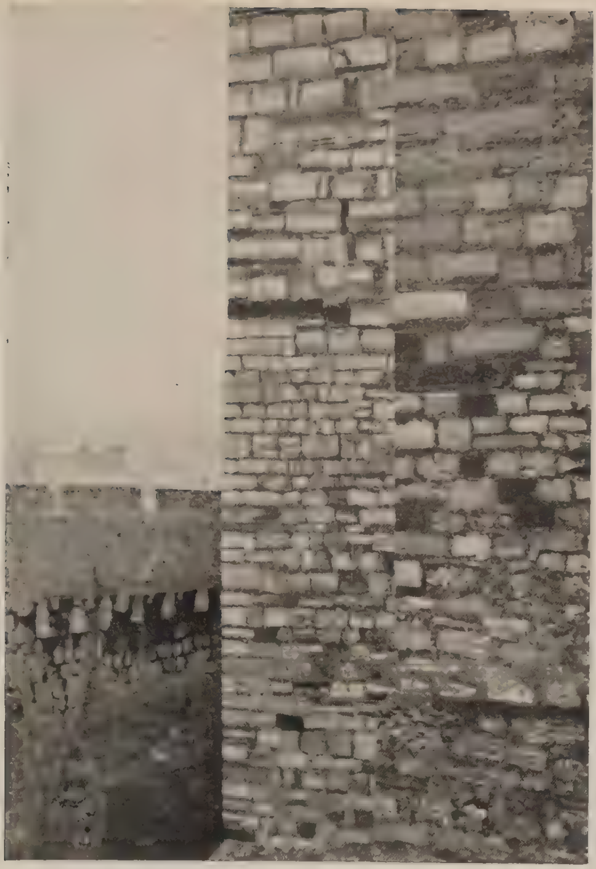


c. Outer Gatehouse from south-west

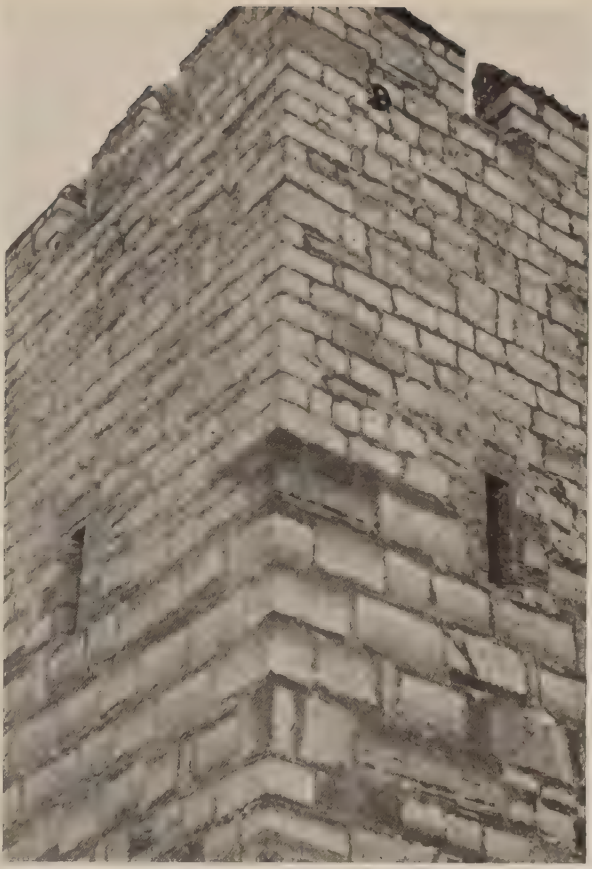


d. Doorway at top of Keep (Style V)

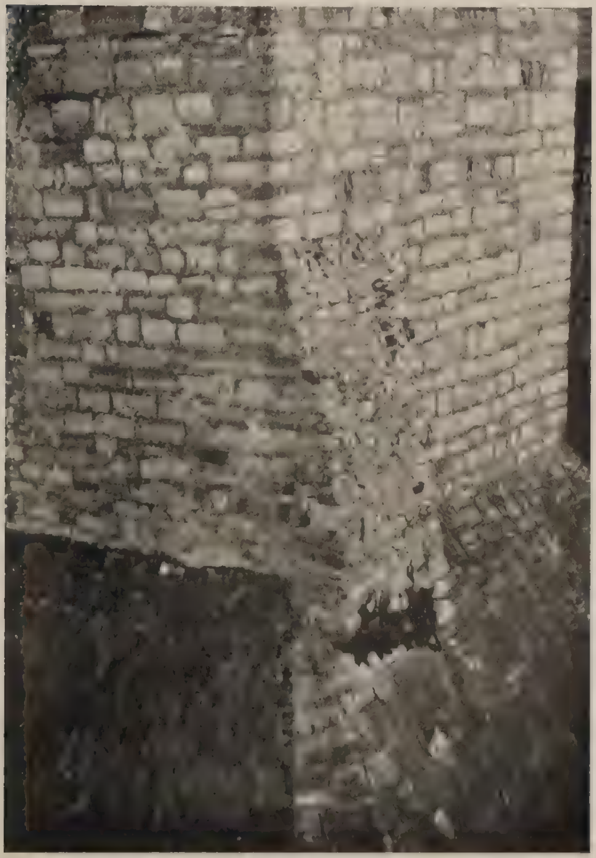
Published by the Society of Antiquaries of London, 1951



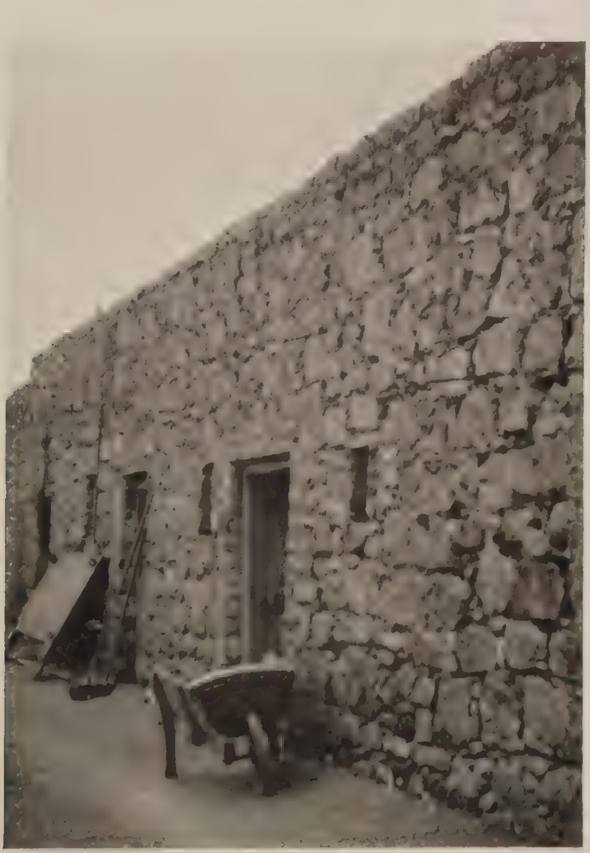
a. West Tower of Keep from south-east (at left Style III, above Style II)



b. West Tower (top) of Keep from south-west (Style V, above Style III)

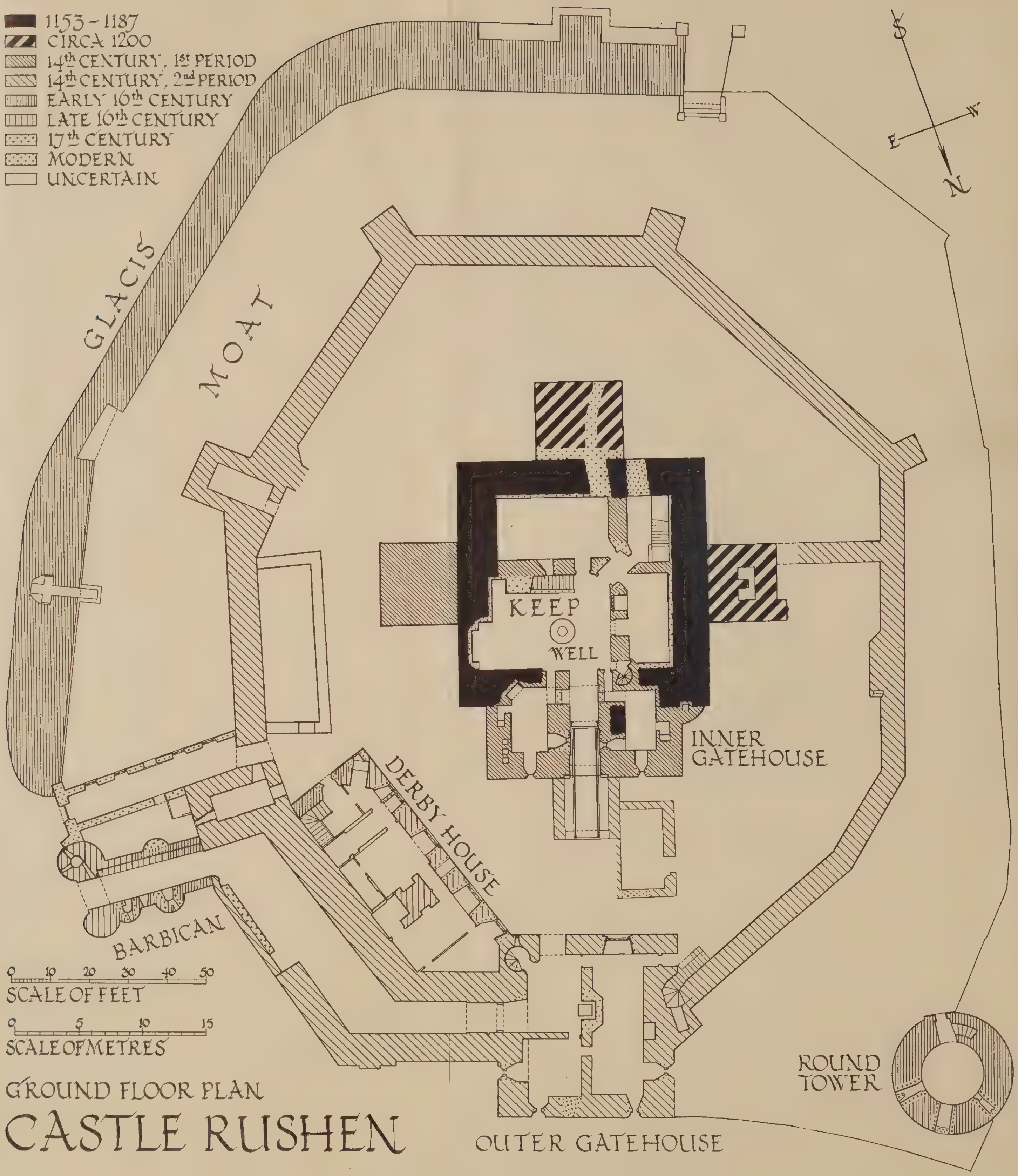


c. West Tower of Keep and old curtain from north



d. Wall (Style VII) of the Bulwark

Published by the Society of Antiquaries of London, 1951


1153 – 1187
CIRCA 1200
14th CENTURY, 1st PERIOD
14th CENTURY, 2nd PERIOD
EARLY 16th CENTURY
LATE 16th CENTURY
17th CENTURY
MODERN
UNCERTAIN
S
W
E
N
GLACIS
MOAT
KEEP
WELL
INNER GATEHOUSE
DERBY HOUSE
BARBICAN
ROUND TOWER
OUTER GATEHOUSE
0 10 20 30 40 50
SCALE OF FEET
0 5 10 15
SCALE OF METRES

GROUND FLOOR PLAN

CASTLE RUSHEN

Published by the Society of Antiquaries of London, 1951

Aeolipiles as Fire-blowers

By Dr. W. L. HILDBURGH, F.S.A.

[*Read 9th December 1948*]

AN aeolipile is a device whose essential feature is that vapour confined in it under pressure can issue from it only through a small aperture. Although the *Oxford English Dictionary* agrees with the French Academy in deriving 'aeolipile' from a combination of the name of the god of the winds, Aeolus, and the Latin *pylae* or the Greek πύλαι, implying thus that originally it meant something like 'doorway of Aeolus' or 'gates of the winds',[1] I am inclined to accept rather its derivation from 'Aeolus' and the Latin *pila*, a ball, and an original meaning 'ball of Aeolus' or 'of the winds'.[2] Vitruvius, writing during the reign of Augustus, says, in a passage concerned with the winds, 'id autem verum esse ex aeolipilis aereis licet aspicere . . . fiunt enim aeolipilae aereae cavae. hae habent punctum angustissimum quo aquae infunduntur conlocanturque ad ignem, et antequam calescent non habent ullum spiritum, simul autem ut fervere coeperint, efficiunt ad ignem vehementem flatum'.[3] This seems to show pretty clearly, by both the form of the word and the description of the object to which Vitruvius applies it, that the word was based on *pila* and not on *pylae*. Conceivably it was the spherical shape of early aeolipilic fire-blowers which suggested the trunnioned steam-filled ball provided with projecting L-shaped tubes from which the steam could issue and, by its reaction, cause the ball to revolve, which Hero of Alexandria describes in his *Pneumatika*,[4] and which is still used to demonstrate to students a jet of steam's inherent reactive force. Hero's text does not, however, include any word relatable to the term Vitruvius applied to his fire-blowing spheres.

The word 'aeolipile' is a generic term embracing not only such things as the balls above mentioned, whether for blowing a fire or for obtaining mechanical work from steam, but also a number of other contrivances for utilizing the energy of a vapour—

---

[1] Cf. *O.E.D.*, s.v. 'Aeolipyle, -pile . . . also eolipyle, -pile'; Littré, *Dict. de la langue française*, 1863, s.v. 'Éolipyle'; Bescherelle, *Nouveau Dict. national*, 1887, s.v. 'Éolipyle'. Cf. also Tommaseo (and others), *Diz. della lingua italiana*, 1929, s.v. 'Eolipila'; etc.

[2] Cf. Hatzfeld and Darmesteter, *Dict. général de la langue française*, s.v. 'Éolipile et Éolipyle'; J. A. C. Heyse, *Fremdwörterbuch*, 1903, s.v. 'Äolus, . . . Äolusball'; Samuel Johnson, *Dictionary* (ed. 1773), s.v. 'Eolipile'.

[3] Cf. Valentinus Rose, *Vitruvii de Architectura* (Leipzig, 1867), i, 6, 2; A. Choisy, *Vitruve* (Paris, 1909), i, 11, 4–6. Choisy gives (*loc. cit.*) a French translation; a German translation is given by Wilhelm Schmidt, *Herons von Alexandria Druckwerke und Automatentheater* (Leipzig, 1899), p. 491. A footnote of Rose's (*loc. cit.*) suggests that some of the medieval copyists had difficulty with the word in question. F. Granger, in his translation of the above passage (cf. *Vitruvius on Architecture*, in Loeb Classical Library, 1931, i, p. 55), seems to go beyond its sense in speaking of 'figures of Aeolus'; and perhaps also in rendering *punctum* as 'point' rather than 'aperture'.

[4] There is some uncertainty concerning the period at which Hero wrote; conjectures have ranged from the later half of the third century B.C. to about the end of the second century B.C.—now most generally accepted—or even considerably later. There is nothing in Hero's text, beyond the broad statement that he added his own discoveries to those 'handed down by other writers', to suggest that he invented either the rotating steam-ball or the contrivances (cf. pp. 30 f. *infra*) he describes in which a steam-jet is employed to blow burning coals. The rotating steam-ball is described in *Proposition* 50 of the *Pneumatika*, and an analogous device for rotating a disc by means of heated air in *Proposition* 70; cf. Bennet Woodcroft, *The Pneumatics of Hero of Alexandria* (London, 1851).

steam in most cases—escaping under pressure through a small hole, as well as blow-torches in which an inflammable substance is vaporized and ignited as it issues from its confinement.[1] Aeolipiles have long been employed in several sorts of scientific apparatus, for demonstration or otherwise, and the continuous 'wind' produced by an aeolipile may, as we shall have occasion to recall (cf. p. 50 *infra*), be applied to turning a wheel having vanes upon which the jet of steam mixed with air impinges. And, as Bishop Wilkins says,[2] 'They may also be contrived to be serviceable for sundry other pleasant uses, as for the moving of sails in a chimney corner, the motion of which sails may be applied to the turning of a spit or the like.'[3] We shall, however, here be concerned, except for a few brief references to cognate devices, only with aeolipiles intended for fire-blowing.

Judging from their descriptions, some aeolipiles, more or less globular, had no more than a hole as the outlet for their steam. In Vitruvius's description, quoted above, there is no suggestion of either a nozzle or a longer tube. And Ambroise Paré, 'Father of French Surgery', writing about 1561, refers to 'soufflets de cuiure, que les Allemāds nous apportent, cōposez en forme de boulle: laquelle remplie d'eau, & n'ayant qu'un petit trou au mileau de sa forme spherique, reçoit la trāsmutatiō de sō eau en air, par l'actiō du feu, pres lequel laboulle sera posee, & poulse avec violence ledit air dehors, le faisant bruire impetueusement. . . .'[4] It would seem probable that most aeolipiles intended for fire-blowing were provided with extensions of their outlets through which the steam could be directed to where it would be of most service. Illustrations of aeolipiles with extended outlets may be seen in old books: e.g. Kircher shows[5] a lemon-shaped vessel with a short tube at one end, and a globular vessel from which extends, at about three-quarters of its height, a tube whose outer end curves downward; and Lazarus Ercker, writing about a century earlier, shows in two of his illustrations workshops in each of which is a largish globular vessel, supported by a frame and heated by a fire beneath it, wherein steam is generated and from which it passes through a long pipe entering an opening, through which presumably air is sucked, in one side of a furnace.[6] Dr. Johnson, defining an aeolipile as 'A hollow ball of metal with a long pipe', adds, 'which ball . . . sends out, as the water heats, at intervals, blasts of cold wind through the pipe.'[7]

A ball-shaped aeolipile, such as Vitruvius describes, able to rest comfortably on the coals and to be turned easily in any desired direction, would appear to have been indeed efficient as a fire-blower. Bernard Palissy—a notable scientific experimenter but better known to us through the glazed pottery he perfected—tells us, for example, that by using one he was able to burn wood but freshly cut.[1] We might, in consequence, well expect spherical aeolipiles to have been sufficiently common in classical times to have left us, if not perhaps complete examples, at least fragmentary ones. An earthenware aeolipile in human shape, of the sixteenth century, is on record (cf. p. 48 *infra*), indicating the feasibility of making an aeolipile of pottery, wherefore there presumably should survive spherical ceramic aeolipiles, whole or fragmentary, even should all ancient metal ones have by ill-chance found their way to melting-pots, since earthenware is not merely virtually indestructible but if broken is valueless for re-use. Yet, although I have inquired diligently for even fragments derived from Classical ball-shaped aeolipiles, I have completely failed in finding any, or records which conceivably might refer to survivals of the kind. Such seeming absence of remains of ancient aeolipiles suggests, I think, that their use was far from general and was perhaps confined principally to scientific demonstrations and possibly technical operations, and that if they appeared in the household it was as playthings rather than to serve practical needs. For ordinary domestic use there were several inconveniences attached to them—the trouble of replenishing them, the necessity of watching metallic ones lest they become exhausted and in consequence overheated, and in the case of those with very small orifices the danger of their vents becoming choked and the ball bursting.[2] For the Himalayan aeolipiles (cf. pp. 51 f. *infra*), the circumstances of whose users are of a special character, those or similar inconveniences might well be more than compensated for by the advantages attaching to their employment.[3]

---

[1] Cf. Heyse, *loc. cit.*

[2] Cf. John Wilkins, *Mathematicall Magick* (London, 1648), p. 149.

[3] Basilius Valentinus, after describing an aeolipile consisting of a copper ball about the size of a head, having in it a very small hole, and pointing out that if filled with water and set upon glowing coals it may be used to blow them, suggests the use of analogous aeolipiles for ventilating mines; cf. *Bergwerckschatz* (Frankfurt a/M., 1618), pp. 128 f. (chap. xxxvi). The English translation of this, chap. xxxvi of *The Last Will and Testament of Basil Valentine* (London, 1671), 'Of Spiro, or of the blast', describes (pp. 75 f.) the ball-shaped aeolipile but does not refer to the possibility of the use of aeolipiles for mine-ventilation. Hatzfeld and Darmesteter give (*loc. cit.*) 'Ventilateur pour chasser la fumée' as an alternative definition for 'Éolipile'.

[4] A. Paré, 'II. Discours tovchant le faict de harquebuzardes, et autres bastons à feu' (cf. *Les oeuvres d'Ambroise Paré*, 6th ed. [Paris, 1607], p. 415).

[5] Cf. J. S. Kestler, *Physiologia Kircheriana Experimentalis, 1675* (Amsterdam, 1680), p. 173.

[6] Cf. L. Ercker, *Beschreibung Allerfürnemsten Mineralischen* . . . (Prague, 1574), Title-page and p. ciii r.; *ibid.* (Frankfurt a/M., 1598), pp. 1 r., 98 v.

[7] *Dict.*, *loc. cit.*

It is perhaps worth mentioning that an aeolipile having but a single small hole, serving for both the entering water and the emerging steam, is by no means so difficult to replenish as, lacking an opening through which the enclosed air may escape while the water enters, it would at first glance appear to be. Should the vessel be empty, it need only be warmed sufficiently to expand the air within and then placed with its orifice under water so that water will be sucked in as the vessel cools and the air contracts; when there is water within, the vessel should be heated so as to fill it with steam—which occupies many hundreds of times the volume of liquid from which it is produced—and then allowed to cool with the hole under water while the steam condenses. And if the vessel, fresh from a spell of fire-blowing and still full of hot steam, be taken direct to the water for recharging it, even a special preliminary heating may be dispensed with. There would seem, however, except in the case of small aeolipiles (such as the Himalayan ones; cf. pp. 51 f. *infra*) made of thin metal, no great need to have only the one hole; should a second hole, permitting the pouring in of the water, be provided, it may have a removable plug; perhaps one sufficiently free to be blown out should the steam pressure become dangerously high.

---

[1] Cf. B. Palissy, *Discours admirables, de la nature des eaux et fontaines* . . . (Paris, 1580): 'j'ay consideré une pōme d'airain qu'il n'y aura qu'vn petit d'eau dedans, & estant eschauffee sur les charbons, elle poussera vn vent tresuehemēt qu'elle fera brusler le bois au feu, orcs qu'il ne fut coupé que du jour mesme.'

[2] Compare, however, remarks *infra* (pp. 52 ff.) concerning the enigmatic medieval earthenware objects which have been found in large numbers in western Asia and northern Africa.

[3] About the year 1912 our Fellow, the late O. M. Dalton, began preparation of a note, intended for reading before the Society, on the Society's aeolipile and on a repoussé copper head (cf. p. 49 *infra*) made for use as an aeolipile which for some time had been in the British Museum's Department of British and Medieval Antiquities. This projected note he abandoned, for some unrecorded reason, leaving it—presumably with the intention of adding further material—in the form of a rough draft. That draft, together with the notes used while preparing it, remained at the British Museum in the Departmental archives until October 1947, when I, having been asked to prepare a memoir on the Society's aeolipile and the one found at Henley in 1937, recalled my several discussions with Dalton while he was engaged on his draft and in consequence applied to the Department for permission to consult his notes. Although the draft, which the Department courteously placed in my hands, refers to no material objects with which I was previously unacquainted, it contains a number of observations which I think well deserve quotation in this connexion. Of fire-blowing aeolipiles it says: 'Perhaps this method of quickening a fire by steam was popular because the blower, once set in operation, worked automatically, and did not require the attention demanded by bellows. With wood fires, or charcoal, it must have been efficient, otherwise it would never have remained popular so long. With coal fires, it hardly seems to repay the initial trouble of filling the receptacle, either by immersion in a bucket, or by the use of a narrow funnel. That, at least, was the conclusion arrived at after experiments (unauthorized) with the Society's example on the table. A jet of steam did issue, and did appear to intensify the part of the fire it reached; but the fire looked much the same after the experiment as it did before. And, *ex hypothesi*, the heat has to be considerable before the figure is set to work, otherwise the water would not keep boiling. Perhaps the advent of the steady-burning coal fire really abolished these curious accessories of the fireside in Europe, still leaving them a sphere of utility in those parts of the world where other fuels are employed.'

If steam alone, unaccompanied by air, be blown through a mass of glowing coals, it becomes decomposed, its oxygen combining with the carbon of the coals to form carbon monoxide and its hydrogen being set free. The admixture of carbon monoxide and hydrogen thus created, known as water-gas, will burn in the presence of air with a hot blue flame, the carbon monoxide becoming carbon dioxide and the hydrogen water. Water-gas may be made on an industrial scale, notably for illuminating gas, wherein it gives a foundation for enrichment by some gaseous substance from which particles of solid carbon may be liberated by heat. The chemical reaction between the undiluted steam and the coals withdraws heat from the latter, so that they soon become too cool for the reaction to continue and must be made to glow again if it is to be repeated. If, however, the steam on its way to the coals passes through the atmosphere, as it does when issuing from an aeolipile of the type with which we are here concerned, it brings with it air, some in turbulent mixture with the steam, some borne along by suction, the oxygen in which suffices both to oxidize the water-gas and to combine directly with the carbon in the coals, thereby accelerating combustion. Less advantageously, the steam issuing from an aeolipile may be so directed that, without actually impinging on the coals, it will induce a draught furthering combustion. Steam-jets are, we may recall incidentally, in common use industrially for increasing the draught of a furnace, sometimes placed beneath the coals, sometimes above them; but as such steam-jets generally utilize only a comparatively small part of the steam generated in the boilers supplying them they, although lineal descendants of aeolipiles, do not come within our definition of such apparatus.

Among a number of steam-operated devices described by Hero of Alexandria in his *Pneumatika* (cf. p. 27, n. 4 *supra*) are two in which a jet of steam is directed upon coals burning in a brazier set at the top of a vessel in which steam is being generated. His *Proposition* 74 describes 'The construction of a boiler, on which if a figure is placed, shaped as if in the act of blowing, the figure shall blow on the coals and thus the boiler be heated, moreover . . . nothing shall flow from it [i.e. the boiler] until we have first poured [additional] cold water into a cup . . .'; and in *Proposition* 75 is disclosed 'Another construction of the same kind [which] is employed to produce the sound of a trumpet and the note of a blackbird'. Woodcroft gives (*op. cit.*, pp. 100,

103) diagrams[1] of these complicated, and apparently not very practical, contrivances. Schmidt, who speaks of the stove as one devised for heating water for the bath, gives diagrams differing somewhat from Woodcroft's.[2] Philo of Byzantium, whose period is rather uncertain but is generally assumed to lie in the latter part of the third century and before Hero's, describes in his treatise on pneumatics a perfume-burner (No. 57)[3] in which the coals, upon which the odoriferous substances were to be burnt, might be kept glowing by a jet of steam directed upon them through a pipe emerging from the steam-chamber and curving downward over the brazier. Whether such contrivances as these were ever actually constructed, or whether they served as anything more than ingenious toys, we do not know. Devices like the simple *aeolipila* to which Vitruvius refers, however, do appear to have found practical application.

Towards the middle of the sixteenth century—presumably between 1540 and 1550—there was discovered, among rubbish in the crypt of a fallen chapel in the ruins of the Rotenburg, in Schwarzenburg-Sondershausen, a bronze image of a man, naked but for a girdle of some kind, seemingly fringed, encircling his body within the hollow of his back and hanging in front well below his navel. This image (see pl. XI, *a*, *b*),[4] now preserved in the castle of Sondershausen, represented the man as resting on one knee, his right hand on the crown of his head, his left on his left knee, his hair cut in a style suggesting the thirteenth century, his ugly flattish-nosed face having its cheeks puffed out and lips pursed as if he were blowing. Between the lips is a small hole, expanded at its outer end, leading to the image's hollow interior, and in the crown of the head is a larger one. The image, 57 cm. in height, 35·35 kg. in weight, and with a capacity of about 8 litres, is made of an alloy composed of 91·6 per cent. copper, 7·5 per cent. tin, and 0·9 per cent. lead;[5] it is almost black, as a result of fire-experiments of several sorts. The body (which, like the head, is hollow) is very corpulent, as befits its purpose; the arms and legs, which are solid, are comparatively feeble. The feet, three fingers of the left hand, and part of the left arm—rumoured to have been excised for analysis—are missing. If, as was soon observed, the body be filled with water and the hole in the crown tightly closed, and the image then be strongly heated, a jet of steam will issue from the orifice between the lips; or, should the water-level be above that orifice, the water may spout forth, expelled by the pressure of the confined steam, to a distance of perhaps 20 to 25 ft.[6]

Georg Fabricius provides, about 1566, our earliest record of the Sondershausen

---

[1] 'Drawn expressly for this work.'

[2] *Op. cit.*, figs. 78*a*, 78*b*, and 79, with Greek text and German translation on pp. 305 ff. and 317 ff.

[3] Cf. Philo (Philon) of Byzantium, *Le Livre des appareils pneumatiques . . .*, edited by Baron Carra de Vaux from Arabic manuscripts at Oxford and Constantinople, in *Notices et extraits des manuscrits de la Bibliothèque Nationale* (Paris, 1903), p. 196. The construction is illustrated by an accompanying line-engraving.

[4] Reproduced, by courtesy of Dr. Erich Meyer, from O. von Falke and Erich Meyer, *Bronzegeräte des Mittelalters: Romanische Leuchter und Gefässe, Giessgefässe der Gotik* (Berlin, 1935), figs. 215*a*, 215*b*.

[5] Measurements and analysis (made in 1810), as given by F. M. Feldhaus, 'Über Zweck und Entstehungszeit der sogen. Püstriche', in *Mittheilungen aus dem Germanischen Nationalmuseum* (Nuremberg, 1908), pp. 140–5. An enlarged, in some directions elaborated, and well-illustrated version of this appears in F. M. Feldhaus's *Die Technik der Vorzeit, der geschichtlichen Zeit und der Naturvölker* (Leipzig and Berlin, 1914), s.v. 'Püstriche'; and a condensed version of this latter in his *Die Technik der Antike und des Mittelalters* (Potsdam, 1931), pp. 298 f.

[6] Cf. S. C. Wagener, *Handbuch der vorzüglichsten, in Deutschland entdeckten Alterthümer aus heidnischer Zeit* (Weimar, 1842), p. 361; a line-engraving of the image is given in fig. 1138.

'Püstrich'. He says that the family Dutgerode (Tütcherode), in Thuringia, possesses a bronze idol, discovered in a 'subterranean sanctuary' of the Rotenburg, which is hollow and which, when filled with water and surrounded by fire, noisily vomits forth the water, like flames, upon the bystanders.[1] This notion of the 'Püstrich' as an idol is exemplified in a German broadsheet of, presumably, the early seventeenth century, whose text refers to the 'Püstrich' as an idol worshipped by the pre-Christian Thuringian people, and whose pictorial portion (see pl. XI, *b*)[2] shows, as background for a large-scale reproduction of the object, the 'Püstrich' (somewhat too large for its surroundings) being heated and violently emitting steam from the crown of its head, while three persons worship it.

The name Fabricius applied to the object appears in many analogous forms[3] in the abundant printed text concerned with it. It is now commonly referred to as the 'Püstrich', which form has become a generic term for fire-blowing aeolipiles in human shapes. 'Püstrich' and other analogous names for the Sondershausen image are taken to refer both to its representing *a person* blowing and to its action when steam issues from it, and are believed to be related to the German word *pusten*, 'to blow', as well as to a number of German dialect terms referring, in one way or another, to blowing or puffing.[4] There would appear, however, to be a possibility of another derivation, although one to which attention has not, so far as I am aware, hitherto been directed. An Old Prussian word, *parstuck*, for a dwarf or pygmy,[5] is so like 'püstrich' as—taking into consideration the resemblance of the Sondershausen image to a dwarf (cf. p. 46 *infra*)—to suggest that possibly some name associable with *parstuck* was at first applied to that image, and only later did the pronunciation of its name become altered to a form presumed to refer to the image's behaviour rather than to its conformation.

A very considerable and widespread interest was aroused by the Sondershausen 'Püstrich' from almost the moment it was found, and many were the different theories advanced regarding its origin and/or its purpose. Rabe, in 1852, summarized[6] the extensive literature—much of it learned nonsense—which by that time had dealt with it; when, in 1908, Feldhaus published the first[7] of his several articles on it, he could say (p. 141) that it had been discussed by more than sixty writers. Surmises concerning it included suggestions that it was a representation of an ancient divinity, either of the Germans or of the Slavs;[8] that it had been used, with flames spouting from its mouth (as in the figures, cited *infra*, described by Kyeser), to impress the ignorant or to invite gifts for the benefit of the Church, or as a fire-signal of some sort; that it had served as a steam-actuated weapon, or as part of a still, or as a fountain-figure,[1] or simply as an aquamanile, or—in the opinion of Rabe himself—as one of the several supports, more or less alike, for a large basin, such as a font,[2] which in later years had a hole bored between its lips so that it could be used as an aeolipile. English antiquaries of the middle of the nineteenth century knew of the 'Püstrich': Albert Way cited it in his note on the object, similar in many respects, belonging to the Society of Antiquaries, saying that it is 'supposed to represent the deity of the ancient Germans called Busterichus';[3] Dr. William Bell, in a paper on 'Æolophiles', read at the Lancaster Meeting of the British Archaeological Association in August 1850, showed a drawing of it;[4] and Mr. Vernon, in his account of 'Jack of Hilton', mentioned the similarity between that image and the supposed 'Busterichus' at Sondershausen.[5]

---

[1] Cf. Georgius Fabricius, *De Metallicis rebus ac nominibus observationes variae* (Zurich, 1566) [I believe that there is a somewhat earlier edition], p. 13 v. (in chap. iv, 'Aes'): 'In Thuringia à familia nobili Dutgerodia, idolum quoddam aeneū asseruatur, in fundamētis arcis Rotenbergiae, quae deferta nunc iacet, inuentum in sacello subterraneo: idolū appellant Pustericum, statura pueri formatum: . . . Intus cauam est: & aqua repletum, atꝗ igne circumdatū, cum ingenti sonitu aquam illam in astantes instar flammarum euomit.'

[2] I am indebted to Dr. H. Swarzenski for knowledge of this interesting document. His inquiries, from printrooms at Berlin and Munich and in America, and mine in the British Museum, have failed to disclose its origin. A picture of the 'Püstrich', similarly on a large scale and set in a landscape, emitting steam from both the crown of its head and from its mouth, although without fire beneath it or worshippers about it, and without a second representation in the background, is given in E. Tentzel's *Monatliche Unterreden* (Leipzig, 1690) (reproduction in *Falsche Slawengötter* [cf. n. 8 *infra*], pl. VIII).

[3] Cf. M. F. Rabe, *Der Püstrich zu Sondershausen, kein Götzenbild* (Berlin, 1852), chap. v.

[4] *Ibid.*, pp. 39 f. Cf. also Grimm, *Deutsches Wörterbuch* (1889), s.v. 'Pusten', 'Püster'.

[5] Cf. Hastings, *Encyclo. Religion and Ethics*, s.v. 'Dwarfs and Pygmies', p. 122.

[6] Cf. *op. cit.*

[7] Cf. p. 31, n. 5 *supra*.

[8] On this aspect of the Sondershausen 'Püstrich', cf. Leonhard Franz, *Falsche Slawengötter*, 2nd ed. (Brünn and Munich, and Vienna, 1943), pp. 62 ff. The first edi-

The noteworthy differences in size and in weight between the Sondershausen 'Püstrich' and the several analogous English aeolipiles are presumably to be accounted for by the differences in the circumstances of their use. The height of the 'Püstrich' is recorded as about 22½ in. and its weight as about 78 lb.; 'Jack of Hilton', by far the largest of our English figures, is only 16 in. high and less than 9 lb. in weight. But whereas the English aeolipiles were made for use in private homes, the Thuringian one was—we may believe—intended for stimulating the great fire in the large hall of a medieval castle, and necessarily was not only bigger but, for corresponding strength, proportionately considerably heavier.

Feldhaus appears to have been the first to point out that the Sondershausen 'Püstrich' expressed in concrete form an observation of Albertus Magnus—Albert the Great, German author of many learned works—written in the thirteenth century, and corresponded in the essentials of its construction to illustrations, drawn in the early fifteenth century, of manuscripts of Konrad Kyeser's *Bellifortis*.[6] Albertus, to whom the works referring to the power of steam of Philo, of Hero, and of Vitruvius doubtless were known, says[7] that if one takes a strong vessel of bronze, well hollowed within, having a small aperture in its upper part and another a little larger in its belly, and having feet so that its belly does not touch the ground, and, having stopped one of its

---

tion of this, printed privately in 1941 for members of a Leipzig antiquarian society, embodied Franz's article, 'Der Püstrich', which had appeared in 1940 in *Mitteldeutsche Volkheit: Hefte für Vorgeschichte, Rassenkunde und Volkskunde*, 7th Year (a typescript copy of this article, kindly sent me by Dr. Bruno Thomas, of the Vienna Kunsthistorisches Museum, at Mr. J. F. Hayward's request, contains nothing not repeated in the corresponding text of the book). The book, which deals with a considerable number of objects, some of them true antiquities whose origins had been forgotten, others forgeries made with a view to sale or as mere mystifications, concerns itself with the Sondershausen 'Püstrich' mainly because of that object's former wide acceptance as a putative divinity, but includes references to, and brief extracts from, much of the literature touching on analogous aeolipiles on the Continent, and gives small half-tone reproductions of some of those pictured in Feldhaus's *Die Technik*, 1914 ed.

[1] In the view also of v. Falke, some quarter of a century later than Feldhaus's article (which he mentions) of 1908; cf. v. Falke and Meyer, *op. cit.*, p. 34.

[2] Cf. Rabe, *op. cit.*, chap. xvi, with diagram facing p. 212.

[3] Cf. Albert Way, *Catalogue of Antiquities . . . in the Possession of the Society of Antiquaries, 1847* (London, 1847), p. 22.

[4] Cf. *Journ. Brit. Archaeol. Assn.* vi (1851), p. 345.

[5] Cf. W. F. Vernon, in *Archaeol. Journ.* viii (1851), p. 194.

[6] Cf. P. E. M. Berthelot, 'Le Livre d'un ingénieur militaire à fin du XIV^e siècle', in *Journ. des savants*, 1900, pp. 1–15, 85–94.

[7] Cf. *B. Alberti Magni: Opera omnia*, iv (Paris, 1890), p. 634 (in Tract. II, cap. 17).

holes firmly with wood, fills it with water and then puts it into a very hot fire, steam will be generated in the vessel and will break forth through one or the other of the two openings; if it breaks through the upper hole, it scatters water widely about the place adjacent to the fire, and if it breaks through the lower one it erupts water widely into the fire and the force of the steam scatters firebrands and coals and hot ashes far from the fire and upon places nearby: on that account such a vessel is commonly called a *sufflator*, and is customarily given the shape of a man blowing.[1]

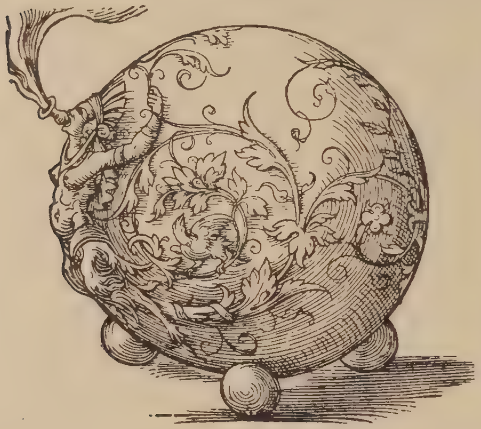


FIG. 1. Design for an aeolipile by Virgil Solis.

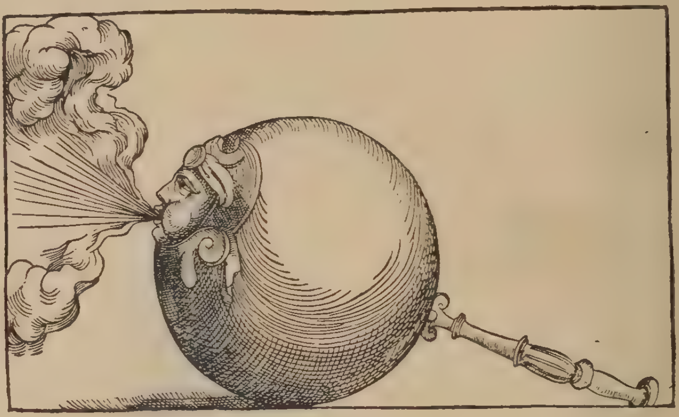


FIG. 2. Design for an aeolipile by Jean Goujon.

While the greater part of this extract would seem to suggest that Albertus when writing it had in mind something other than the Sondershausen 'Püstrich'—and perhaps was somewhat confused about its construction and its functions—its concluding clause seems decidedly to indicate that in it he refers to an object very similar to that 'Püstrich'. We may, however, observe that aeolipiles of other shapes have been devised which conform fairly closely, except perhaps for the unnecessary and disadvantageous lower aperture, to his general description and yet at the same time embody a representation of a human figure blowing. Fig. 1, reproducing one of Virgil Solis's illustrations for a mid-sixteenth-century German translation of Vitruvius,[2] shows an aeolipile of the sort. A globular vessel, presumably of metal and with chased decoration, set upon three ball-shaped feet, has on its front a fantastic anthropomorphous figure from whose mouth issues a cloud of steam. An analogous design (see fig. 2),[1] by Jean Goujon, illustrating a contemporary French translation of Vitruvius, shows a large ball, presumably made of metal, on whose forward part is a representation of a man's face, the cheeks puffed out and a hole between the lips through which steam can emerge; at the back, opposite this face, is a straight handle for manipulating the aeolipile. Anthropomorphous additions of this kind to a ball—the *pila* of Vitruvius's text—doubtless were meant as symbolizations of Aeolus, god of the winds (including the 'wind' emittable by an aeolipile), as suggested by the wording of that text (cf. p. 27 *supra*).

---

[1] 'quod si sumatur vas aerum forte quod sit intus bene concavum, et habeat parvum foramen supra, et aliud habeat in ventre parum majus, habeatque vas pedes ita quod venter ejus non tangat terram, et implentur vas aqua, et postea lignis fortiter obstruatur unumquodque foramen ipsius, et ponatur in igne valde calido, generatur vapor in vase, quem fortificatum retro erumpit per alterum foramen obstructum: et si irrumpit superius, longe projicit aquam sparsam super loca adjacentia igni: et si inferius erumpit, projicit aquam sparsam in ignem, et impetu vaporis projicit titiones et carbones et cineres calidos longe ab igne super circumstantia loca: et ideo etiam vas illud vulgariter *sufflator* vocatur, et solet figurari ad figuram hominis sufflantis.'

[2] Cf. Walther H. Ryff (G. H. Rivius), *Der furnembsten notwendigsten der ganzten Architectur* . . . (Nuremberg, 1547), p. xx r.; *ibid.*, *Vitruvius Teutsch* (Nuremberg, 1548), i, 6, p. xlv v. The engraving was reprinted in several later editions of these translations. In both of the early editions cited above, as well as in some of the later editions, it is accompanied by a picture of a number of related objects—three of them vase-shaped vessels provided each with a vertical nozzle in the centre of the top, presumably, as steam ascends from two of the nozzles, designed as aeolipiles; the remaining two, spheres (one of them furnished with long radial spikes), from which issue what appears intended to represent flames, presumably incendiary missiles (compare Kyeser's 'Philoneus' mentioned below, and the fire-bombs referred to on pp. 52–5 *infra*). The same five aeolipiles (but not an aeolipile corresponding to our fig. 1), varied only in details, appear in a number of earlier sixteenth-century editions of Vitruvius's 'Architecture': e.g. in the Como edition of 1521, p. xxiii r., in Italian; and in the Strasburg edition of 1543. The Venice

The contrivances described by Kyeser and illustrated in manuscripts of his writings are very similar, in nature and in some cases in form as well, to anthropomorphous aeolipiles, although they were devised for the emission of flames, and not of steam for quickening a fire. Feldhaus reproduces several such contrivances,[2] two of them from a manuscript of 1405. The text in this manuscript explains that 'I am Philoneus, made of copper, silver, bronze, clay, gold, or other sturdy stuff, and when I am empty I do not burn. But set my body, filled with turpentine or with strong wine, on the hearth, then, warmed, I emit fiery sparks with which you may light any candle.'[3] One of Feldhaus's reproductions (fig. 552) shows a figure of a naked youth which, as he points out, seems to fail to fit this specification; but another (fig. 554) shows a similar figure with flames coming from its mouth,[4] and a third (fig. 555) with flames issuing from its mouth and its navel, while a fourth (fig. 553) shows a bust of a man the mouth of which emits flames and is accompanied by text saying 'This head which, as you see it here pictured, has in its mouth sulphur-powder, and will ignite a candle however often it may be extinguished. If its mouth be approached, a stream of fire shoots forth.'[5] With such pyrotechnic devices we need not here concern ourselves beyond observing that the bust-type is paralleled precisely in aeolipiles, and the standing type by kneeling figures.

Bronze figures, in shape very like the Sondershausen 'Püstrich' and made for use as fire-blowers, were employed in England in, presumably, the medieval period. At least three such still exist, very similar to each other in form and in size, but considerably smaller than the 'Püstrich'. Two of them—the so-called 'Jack of Hilton' and the one

---

edition of 1524 shows (p. 9 r.) a design for a large globular aeolipile—which, as it has its orifice at one end of a horizontal diameter, presumably was intended for blowing a fire—ornamented in relief with a large crouching dragon-like beast beneath whose snout is the blowing-hole, and with a man bending forward at the hips and supporting with one upraised hand a tube at whose extremity is the blowing-hole.

[1] Reproduced from Ian Martin's *Architectvre ov Art de bien bastir* (Paris, 1547), p. 11 r.

[2] Cf. *Die Technik der Vorzeit . . .*, figs. 552–5.

[3] 'Ego sum Philoneus, cupreus, argenteus ipse,
Aereus seu terreus, aureus vel fortis minere.
Vacuus non uro, sed repletus terebintho,
Baccho vel ardenti, corpus meum applica foco,
Nam calefactus ego igneas emitto scintillas
Per quas tu possis accendere quamcumque candelam';
cf. Berthelot, *op. cit.* p. 90. I do not know whether 'Philoneus' was designed for a serious purpose or whether he was intended merely as a scientific toy.

[4] The middle of this figure has been obliterated by ink-lines, close together, drawn across it.

[5] 'Dieser Kopf, der, wie du ihn hier abgebildet siehst, In seinem Mund Schwefelstaub hat, zündet eine Kerze, so oft sie ausgelöscht wird, immer wieder an. Wenn sie seinem Mund genähert wird, schiesst der Feuerstrahl heraus.' Cf. Feldhaus, *op. cit.* col. 845.

belonging to the Society of Antiquaries—long have been on record in print; the third, after being lost for many years, recently came to light again at Henley-on-Thames. Documentary history for 'Jack of Hilton' goes back to 1592, by which year he already had long been in the possession of an ancient family; that for the example belonging to the Society of Antiquaries to before the end of the eighteenth century; while the one found at Henley is known to have been in use for many years before it was discarded, about the eighties of the last century. Furthermore, 'Jack of Hilton' and the Henley figure are on record as having been employed as fire-blowers, thus pointing to a probability—although, because of the differences in sizes and weights, not a certainty—that the Sondershausen 'Püstrich', too, served as a fire-blower. 'Jack of Hilton' (pl. XII, *a*, *b*)[1] is a small bronze figure of a man, completely naked, resting on his left knee, his right hand at the side of his head, his left grasping his virile member—which is, like his testicles, exaggerated in size.[2] His longish hair, cut square at the neck, hangs free. Between his lips is a small hole through which the operative steam may emerge; and in his back, between the shoulders, a hole a little larger. He is 16 in. in height and weighs 8 lb. 14 oz. He became well known to English antiquaries through Dr. Plot's account[3] of an annual custom, of ancient origin, in which he was said to have played an important part. Plot tells us that there was

> a service due from the Lord of *Essington* . . . to the Lord of *Hilton*, about a mile distant, *viz*. that the Lord of the Manor of Essington . . . shall bring a *goose* every *New-years* day, and drive it round the fire in the *Hall* at *Hilton*, at lest 3 times (which he is bound to doe as mean Lord) whil'st *Jack* of *Hilton* is blowing the fire. Now *Jack* of *Hilton*, is a little hollow Image of brass . . . having a little *hole* in the place of the *mouth*, about the bigness of a great pins head, and another in the back about 2/3 of an inch *diameter*, at which last hole it is fill'd with water, it holding about 4 pints and ¼, which, when set to a strong fire, evaporates after the same manner as in an Æolipile, and vents it self at the smaller hole at the mouth in a constant blast, blowing the fire so strongly that it is very audible, and makes a sensible impression in that part of the fire where the blast lights, as I found by experience *May* the 26. 1680. After the Lord of *Essington*, or his *Deputy* or *Bayliff*, has driven the goose round the fire (at lest 3 times) whilst the *Image* blows it, he carrys it into the *Kitchen* of *Hilton Hall*, and delivers it to the *Cook*, who having dressed it, the Lord of *Essington* or his *Bayliff*, by way of further service, brings it to the table of the Lord paramount of *Hilton* and *Essington*, and receives a dish of meat, from the said Lord of *Hiltons* table, for his own Mess. Which service was performed about 50 years since,[4] by *James Wilkinson* then Bayliff of S^r *Gilbert Wakering*, the Lady *Townsend* being Lady of the Manor of *Hilton*, *Tho. a Stokes* and *John a Stokes* brothers, both living An. 1680. then being present.

In the middle of the last century Mr. W. F. Vernon, of Hilton Park, exhibited the figure before the Archaeological Institute, giving some further particulars relating to it. He cited, as the earliest notice he had found concerned with it, a bill datable between 1596 and 1598 in which it is spoken of as 'belonginge to the cheafe capital mesuage of the manner of Hilton, aforesaid, being parcell of the warde's inheritance, tyme whereoff the memorie of man is not to the contrarie, an ancient statue, image,

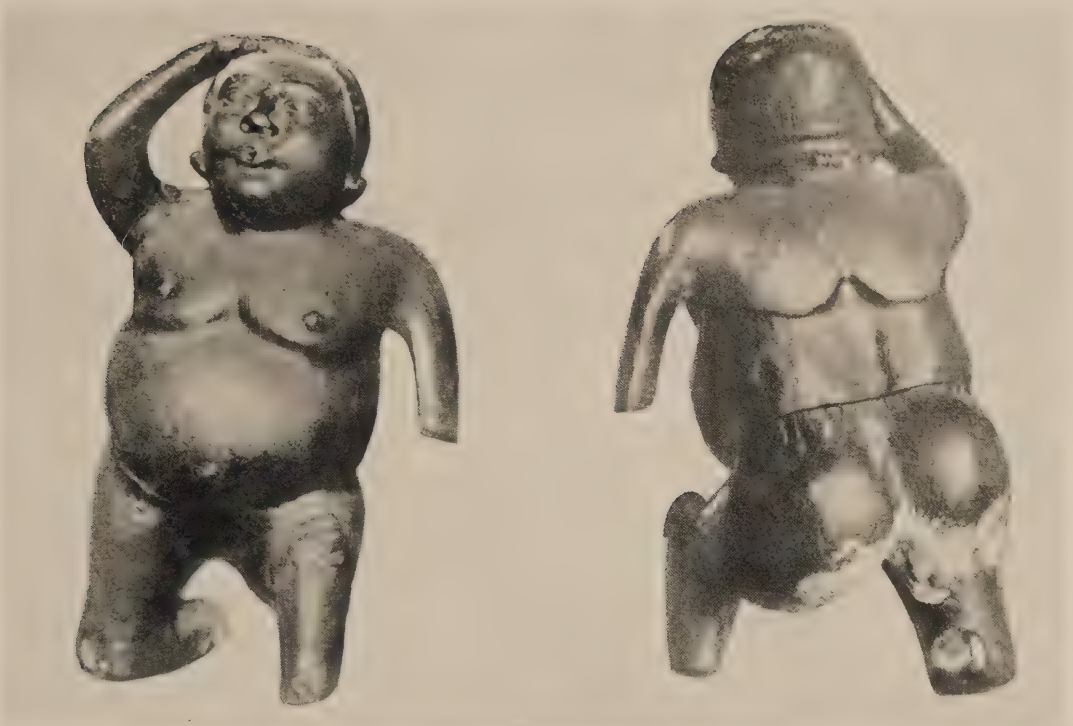
---

[1] Reproduced by courtesy of Mr. Phil Drabble, who had the negatives made specially for use in illustrating this communication, and Mr. R. L. Vernon, the lord of Hilton.

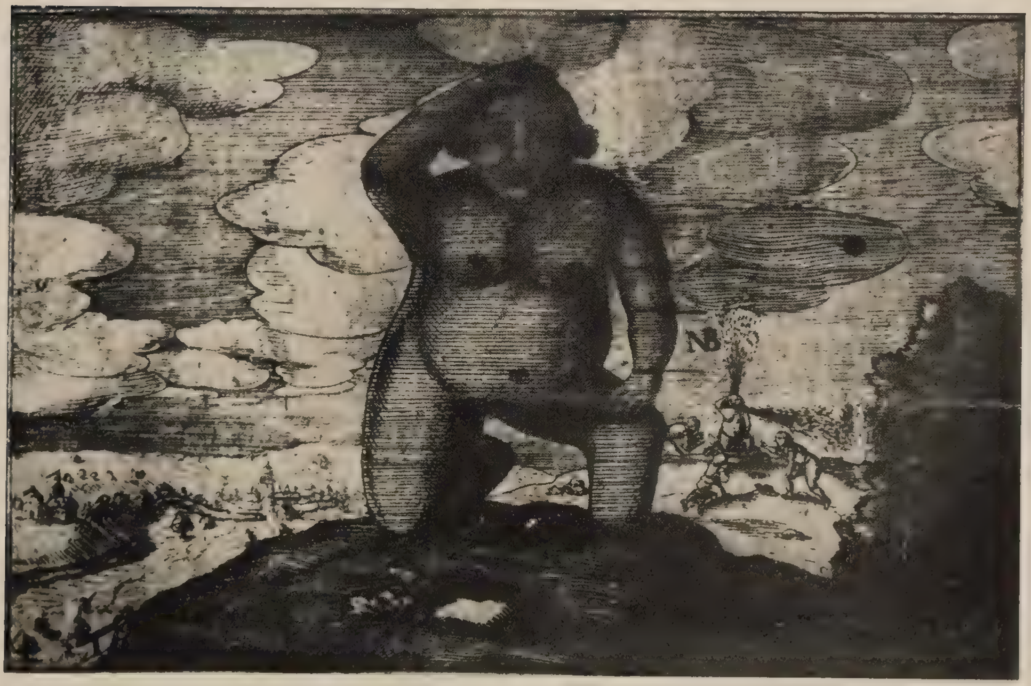
[2] The rough sketch accompanying Plot's account (cf. *infra*) attempts to mask these parts by foliage which is absent from the object itself.

[3] Cf. Robert Plot, *The Natural History of Staffordshire* (Oxford, 1686), pp. 433 f.

[4] This account suggests that a brazier was still, in the first third of the seventeenth century, in use for heating the hall at Hilton.



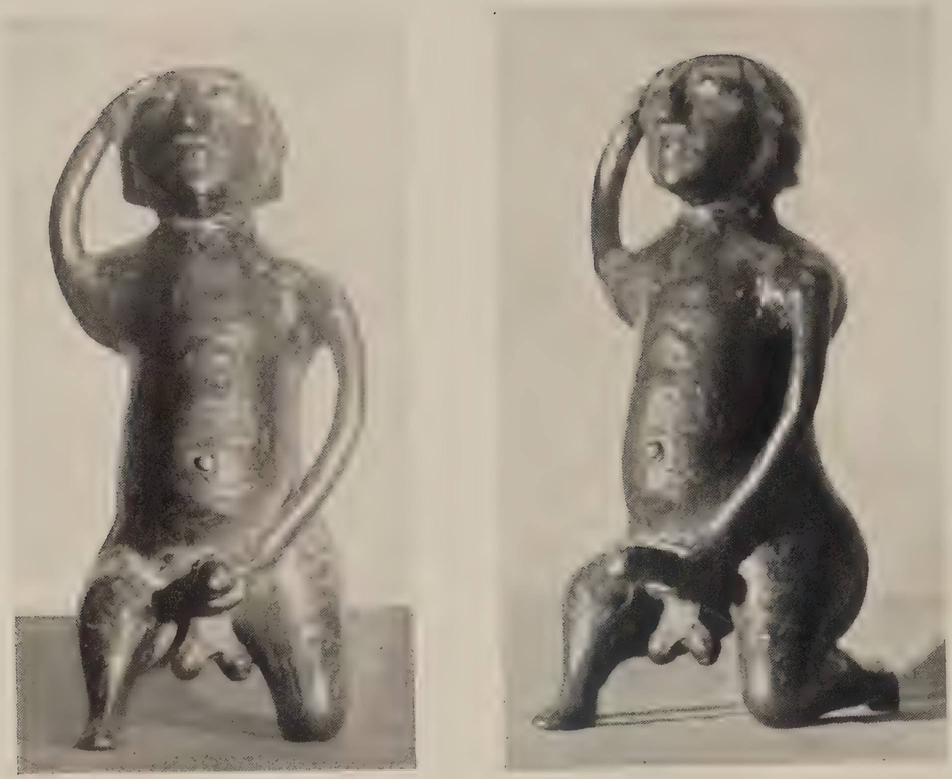
a. The Sondershausen 'Püstrich'



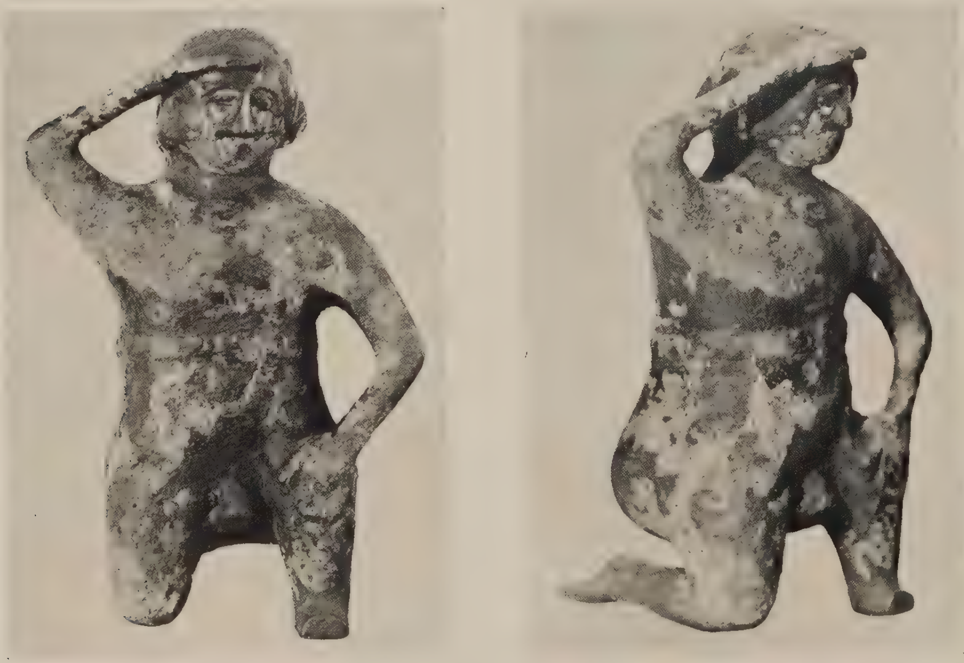
b. The Sondershausen 'Püstrich', from a seventeenth-century broadsheet

Published by the Society of Antiquaries of London, 1951

PLATE XII

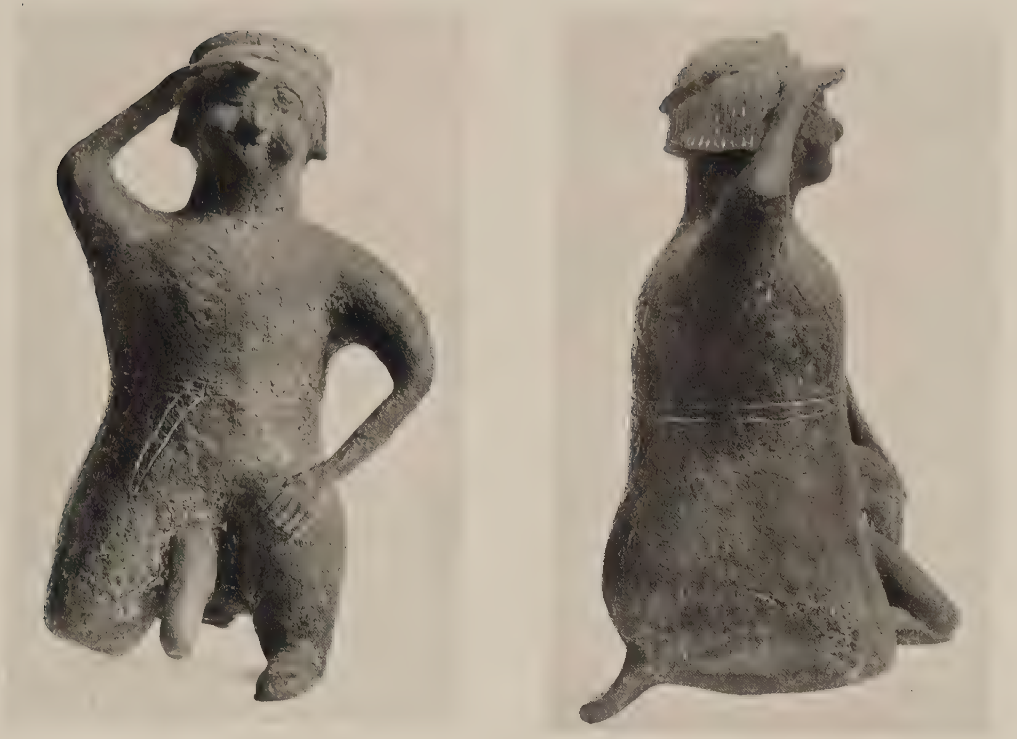


a. 'Jack of Hilton'

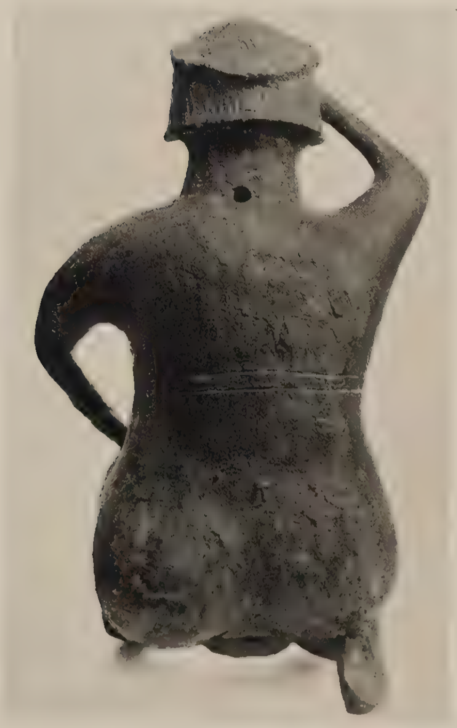


b. Figure from Tamworth

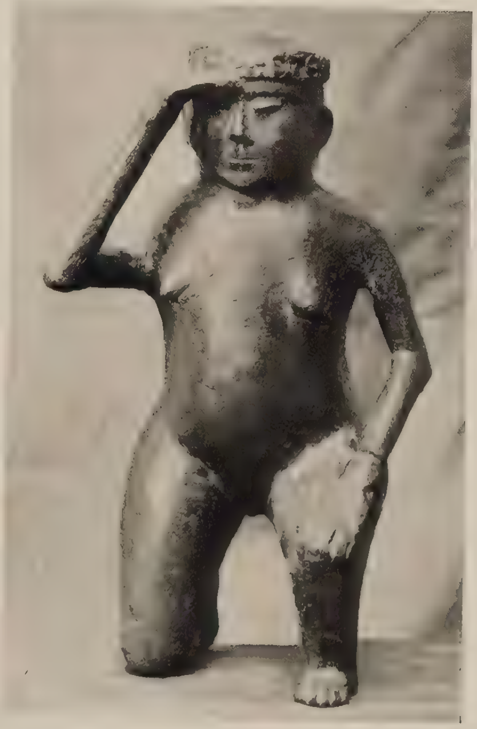
Published by the Society of Antiquaries of London, 1951



a and *b*. Figure belonging to the Society of Antiquaries

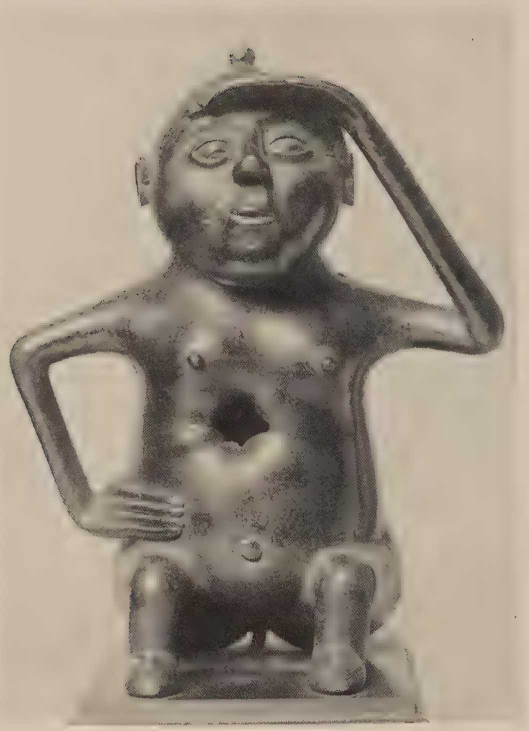


c. Figure belonging to the Society of Antiquaries

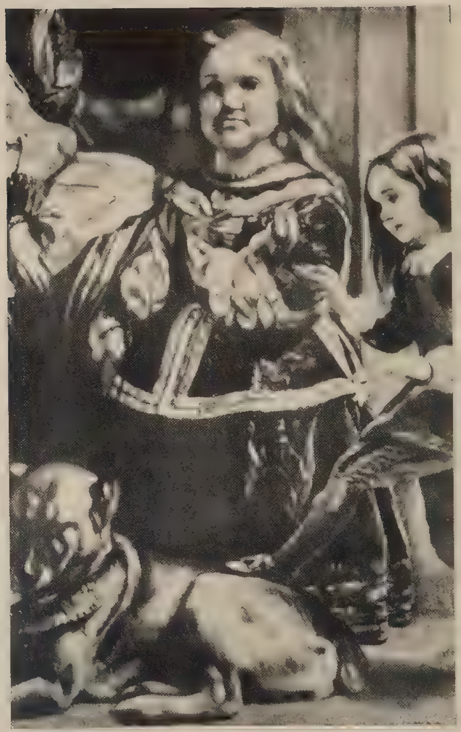


d. Figure belonging to Herr R. von Hirsch

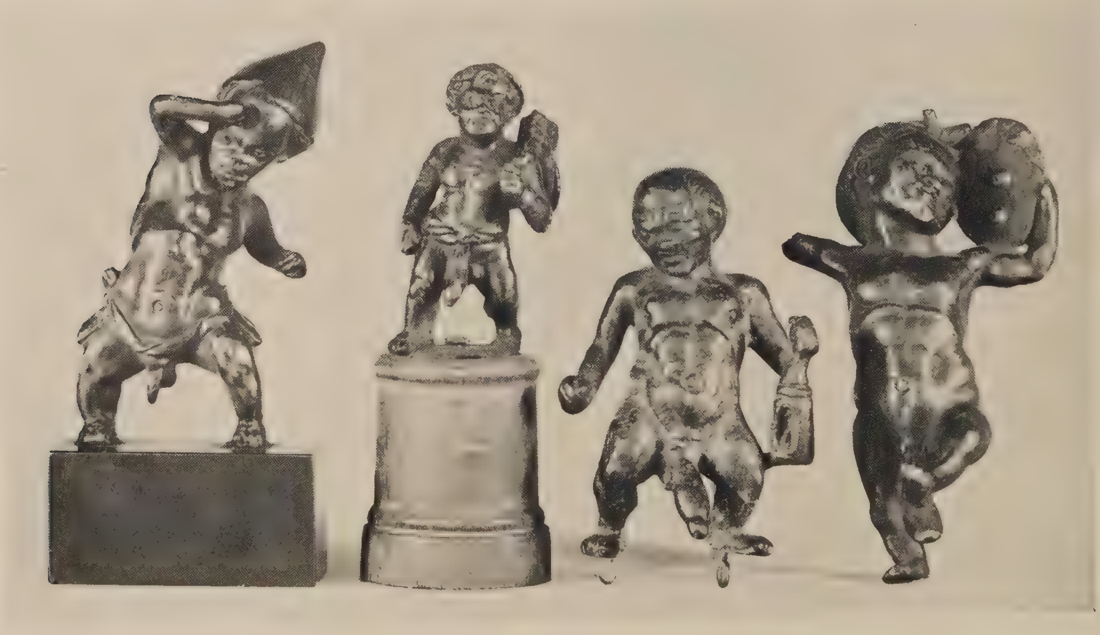
Published by the Society of Antiquaries of London, 1951



a. Figure in Vienna Kunsthistorisches Museum



b. Female dwarf: detail of a painting by Velazquez



1 2 3 4

c. Roman bronze dwarfs in the British Museum

Published by the Society of Antiquaries of London, 1951

instrumente, or heir loome of brasse. . .'. The suit was to get back the image, left by Sir Henry Vernon (d. 1592) and taken from Hilton by Sir Henry Townsend, who had married the ward's mother in 1594. Mr. Vernon cited further a 'Bill of Revival' dated 1616, which adds a little to what we have learned above, an extract from which states that 'certain of which messuages . . . were held . . . as of the said mannor of Essington, by fealty suit of court, and two shillings and seven pence yearlie rent, and by drivinge a goose, with three heads of garlicke about her neck, in the tyme of Christmas everie year about the fyer in the hall of the mannor house of Hilton aforesaid'.[1] 'From 1635 (being the year of the death of Lady Townsend) . . . this service was commuted for 8*d*. annually; and this 8*d*. was regularly paid till 1704, when the whole of the land became the property of H. Vernon, Esq., of Hilton.'[2] It is gratifying to know that the image is still at Hilton, carefully preserved by the present lord of the manor, Mr. R. L. Vernon.

The legal proceedings mentioned above would seem to suggest that 'Jack' was at that time regarded as of considerable importance outside of his part in the rental ceremony. One may surmise that he was thought of as a sort of 'luck' attached to the manor of Hilton. There were in medieval England many instances of lands held by virtue of the possession of some object—often a horn, or a cup of some kind—considered to be evidence of the rights of their possessors to the lands they held. And in many cases such objects came to be looked upon as 'lucks' bound up with the fortunes of the families by whom they were preserved.[3] But whatever may have been the case in the sixteenth century, at present there appears to be, Mr. R. L. Vernon informs me, neither evidence nor tradition to support a conjecture that 'Jack' was at any time accounted to be a 'luck'.

Our Fellow, Mr. Gerald P. Mander, has very kindly sent me some notes concerned with former relations between Hilton and Essington. He says:

> The manorial 'service', if such it was, puzzles me. Essington is one of the manors of the parish of Bushbury . . . Hilton is a small manor adjoining, once a prebend of Wolverhampton church. The Vernons derive from the Swynnertons of Hilton, who also came there by marriage. . . . John de Swynnerton of Hilton bought the manor of Hilton in 1312 (and continued to pay the prebendary), making the place his residence. His son, John de Swynnerton junior, bought the manor of Essington in 1348, there were confirming deeds in 1366 and 1371, and he died in 1379.
>
> Essington, but not Hilton, was part of the Dudley fief (of Dudley Castle), and presumably the lord of Essington held his manor therefrom by some annual payment or service of small value. If then, the lord of Essington (assisted by Jack) performed this service of the goose every New Year's Day, it should have been, surely, to an *overlord*. I think that must have been so, and that Hilton was merely the place of performance (and not before 1348). It would have been pointless for the lord of Hilton *and* Essington to perform it as a service to himself. So we have to include a Dudley overlord or a mesne tenant. In his Inquisition Post Mortem of 1379, Sir John de Swynnerton was found to hold the manor of Essington of Richard Dudley as of the Barony of Dudley (and so through a mesne tenure). Or perhaps the custom may have been a piece of New Year jollity independent of tenure. It is not mentioned in the early deeds.
>
> But it may perhaps be that Dr. Plot was wrong in saying the service was 'from the Lord of Essington', 'now one St. Johns Esq; late S^{r} Gilbert Wakering'. Sir Gilbert Wakering's sub manor or tenement was a place called Blackhalve, just south of Essington (and in a different

---

[1] *Archaeol. Journ.* viii (1851), pp. 192 f.

[2] *Ibid.* p. 194.

[3] Cf. C. R. Beard, *Lucks and Talismans* (London, 1934), chap. v, 'Tenure Lucks'.

parish, that of Wolverhampton). Although I do not know that Blackhalve was held of Essington, the payment by Sir Gilbert Wakering suggests that the owner of Blackhalve transferred his service to Hilton when Hilton took over Essington. Sir Gilbert was the son of Sir Edward Wakeringe of Rickmansworth, in Hertfordshire; he was Sheriff of Staffordshire in 1606, and died in 1617. I should not like to say what happened before his time, and I have not found what brought him to Staffordshire. His Inquisition Post Mortem says he was lord of Essington, and that is a complication, as the jurors were likely to know. Sir Gilbert Wakering did not live at Blackhalve, but at Bloxwich near Walsall, but other Wakerings did, as they appear in the parish register. He may perhaps have been 'farmer', i.e. had a lease of the manor of Essington, so in a sense Hilton would be overlord.

The rental procedure at Hilton, in which 'Jack of Hilton' is recorded as having held so material a place, was but one of a number of analogously jocular customs attached to land tenure in various parts of England. Many such were recorded by Thomas Blount, and to his instances others of the kind were added by Josiah and H. M. Beckwith.[1] The following, which need not all be taken very seriously, in some cases representing the whole of the annual rental or the services due, in others only a part of them, may serve as examples: a man comes into the market-place (at Bradford, Yorkshire), with a halberd, a dog, and a horn, and he winds the horn three times while the heirs of Rushworth of Horton hold the dog by a cord; twenty pence per year are to be paid and one goose, fit for the lord's dinner, is to be brought on the Feast of St. Michael the Archangel; a snowball is to be brought at Midsummer and a red rose at Christmas; a chaplet of roses at Christmas; a bow of ebony and two arrows; three grains of pepper; and a pound of cummin. Mr. Mander has informed me of a case of such tenure of especial interest to us because it was in the immediate vicinity of Hilton, and incidentally as a remarkable example of continuity; that is the tenure of Rushall, near Walsall, which in the time of Henry IV was held of Bushbury (and through that, of Dudley, the tenant in chief) by a rental of *unum par calcarum deoratum vel xxd*, and so on till 1726 when the entry is '0.1.8 or a pair of gilt spurs'.

A bronze image of a man (pl. XII, *c*, *d*),[2] of the same type and roughly of the same size as 'Jack of Hilton', but differing in several details, was discovered some years ago during the cleaning out of a former fish-pond in the garden of the house at Paradise Farm, Henley-on-Thames. It was deposited by its owner, Mr. Sidney à Court, of Paradise Farm, in the Corporation Museum and Art Gallery of Reading, to whose director, Mr. W. A. Smallcombe, and his former assistant Mr. R. Patterson (who had prepared a note[3] on it), I am indebted for my information concerning it as well as for the photographs herewith reproduced. Mr. à Court, in a letter (of which Mr. Smallcombe has kindly sent me a copy) to Mr. Smallcombe in 1938, said that he believed that the image came into possession of his father, Mr. C. H. W. à Court Repington, when, about 1830, he succeeded to Amington Hall, Tamworth, Warwickshire. The Repington family, of Norman descent and settled in Lincolnshire at the Conquest, moved to Tamworth about 1424. Mr. à Court's father, who gave him the object about

---

[1] Cf. *Fragmenta Antiquitatis. Antient Tenures of Land, and Jocular Customs of some Mannors*, by Thomas Blount (London, 1679); *ibid.*, enlarged and corrected by Josiah Beckwith (York, 1784); *ibid.*, with additions by H. M. Beckwith (London, 1815).

[2] Reproduced by courtesy of Mr. W. A. Smallcombe, director of the Reading Museum.

[3] 'Two Hearth-blowers from Henley-on-Thames and Basingstoke', printed in *Berkshire Archaeol. Journ.* l (1947), pp. 98–101.

1896, told him that it had been used, filled with water and placed on the hob so that it should emit steam, at the annual Amington Rent Audit for the amusement of the tenants, but made no mention of any customary observances connected with it. Thrown into one of the stews at Paradise Farm by Mr. à Court's grandmother, it was recovered when the pond was cleaned out. Mr. à Court knew of no record of how or when the figure became associated with Amington Hall.

The height of the figure is 10 in., its weight 5 lb. 15 oz., its capacity 48·5 cu. in. In addition to being somewhat smaller than 'Jack', it differs from him in that it rests on its right knee, instead of the reverse, its right hand is in a position above the right eye, instead of correspondingly against the side of the head; it wears a strap-like girdle round the waist and a circular pendant at the neck; and its hair is parted in the middle and seemingly is bound by a sort of fillet round the head. The hole at the lips is about $\frac{1}{16}$ in. diameter, but instead of being roughly cylindrical throughout widens towards its outer end. The figure has been deprived of parts of its sexual organs and, presumably through unskilful manipulation of the saw at the time of that mutilation, of the front part of its right foot; and the upper part of the back has a hole made by a pick during exhumation. A second hole, about $\frac{3}{8}$ in. diameter, in the back between the shoulders, presumably served for filling the vessel. The core round which the figure was cast was removed through a rectangular opening, now filled in, about $1\frac{1}{2} \times 1$ in., at the bottom of the trunk. The original surface has been worked over in parts by use of a coarse file, but the effects of decomposition make difficult determination of how far such tooling was carried. The likenesses to 'Jack of Hilton' and the figure's association with Amington Hall, distant only some twenty miles from Hilton, and the further circumstance that it 'was used at the Amington Rent Audit for the amusement of tenants', intimate a connexion between it and 'Jack'; and, on the other hand, the girdle which does nothing to relieve its nakedness and its reversed attitude suggest rather a relationship to the Sondershausen 'Püstrich'. The image thus appears to link in some way the Hilton figure and the Thuringian one. Its resemblances to the Society of Antiquaries' aeolipile are still closer than to the Hilton figure.

The Society's example (pl. XIII, *a–c*)[1] was presented, in 1799, by Mr. Edmund Fry. It had been found at a depth of about 10 ft., a few years earlier, by a labourer digging the basin of the canal at Basingstoke, Hampshire, sold by him to a dealer in old metals there, and bought from the latter by Mr. Fry.[2] Its height is $10\frac{3}{4}$ in., its weight 6 lb. 11 oz. The casting is rough, as in the other English figures of the kind, and the opening for removing the core is in the same position, of the same shape, and very nearly the same size as in the Tamworth aeolipile. As may be seen in pl. XIII, *a–c*, the representation is of a naked man, whose penis is disproportionately large, resting on his right knee and with his left hand on his left knee (as in the Tamworth and Sondershausen figures), his right hand against his right brow (as in the Tamworth figure), his cheeks puffed out as if blowing through the small (about $\frac{1}{16}$ in. diam.) hole between his lips, his short hair bound by a sort of fillet, a buckled strap-like girdle with a long hanging end round his waist, and round his neck a cord passing through a sort of ring or pendant (the girdle and the neck ornament, paralleled in the Tamworth figure, here are engraved whereas in that figure they are cast in relief). There is, at the back, a second hole, considerably larger than the one between the lips, at the base of the neck, through which water could be poured when the vessel was to be employed for fire-blowing.

---

[1] From negatives belonging to the Society of Antiquaries.

[2] Cf. Way, *loc. cit.*; *Archaeologia*, xiii (1800), p. 410 and pl. XXVII (figs. 1–3); *Minutes Soc. Antiq.* xxvii, p. 249.

The several likenesses between the English fire-blowing images and the Sondershausen 'Püstrich' would seem to be more than chance ones. In cases of the kind one tends to look for some family connexion—e.g. by marriage—which might have introduced, as a unit, a particular group of details into a foreign milieu. I have, however, been unable to find any record which has suggested that such was the case here. Again, one might envisage the survival into the Middle Ages of some Classical manuscript, of which no example is at present known, showing an anthropomorphous aeolipile for fire-blowing. Hero's descriptions (cf. p. 30 *supra*) of his two water-heaters whose fires could be stimulated by jets of steam do not specify shapes for the figures through which the steam should issue; wherefore an ancient manuscript conceivably might, for some such reasons as those submitted *infra*, have represented them as misshapen dwarfs and thus suggested the giving of analogous shapes to medieval fire-blowing aeolipiles. Yet I am inclined to consider more probable some sort of connexion directly associable with Oxford, in the thirteenth century notable, and in the fourteenth surpassing all contemporary universities, as a centre for scientific studies. The Dominicans settled at Oxford in 1221, long before the death (in 1280) of the learned Albertus Magnus, who in his writings described an anthropomorphous aeolipile (cf. pp. 30 f. *supra*) which might well have had (excepting only the hole in the belly) a form similar to the forms of the Sondershausen 'Püstrich' and the several English fire-blowers. The Dominicans were very forward in the principal universities of the thirteenth century, and Albertus, who travelled widely, himself taught at, amongst others, the universities of Cologne and Paris. Although he did not, so far as I am aware, himself visit England, it would seem not at all improbable that his description in question would have been early in reaching Oxford; nor, indeed, that the medieval anthropomorphous aeolipiles may have originated in England and that Albertus's information concerning them was transmitted through Dominicans settled at Oxford. Unfortunately, I know of no drawing of his aeolipile which is attributable to either the thirteenth or the fourteenth century; and even for the beginning of the fifteenth the nearest thing I am able to recall is the fire-emitting effigy illustrating the 1405 manuscript of Kyeser's *Bellifortis* (cf. p. 35 *supra*). The curiously close parallels between Herr von Hirsch's bronze (which presumably was made in the twelfth century or not much later; cf. pl. XIII, *d* and pp. 41 f. *infra*), the Basingstoke image, and the Sondershausen 'Püstrich', would seem to betoken something more than the transmission of a merely textual account from one country to another. Conceivably, detailed descriptions of anthropomorphous aeolipiles were carried by Dominican friars passing between the Continent and England (where by the end of the thirteenth century there were many friaries), since such friars did not belong to a particular house or province, and assignment of their places of residence was in the hands of the master-general of the order. So amusing, and perhaps indeed so serviceable, a gadget as an anthropomorphous fire-blowing aeolipile, once known at Oxford, might well have spread to places thereabouts. We may recall that one such object was found at Basingstoke, not far from Oxford, and another (reported to have formerly been used at Tamworth) even nearer, at Henley. Perhaps also worth recalling is Sir Gilbert Wakering's association (cf. p. 38 *supra*) with both Hilton and Rickmansworth (which lies some thirty-five miles distant from Basingstoke), suggesting—even though our record of it refers to the seventeenth century—a possibility that there may have been earlier family connexions between Hilton and the Basingstoke area.

It is worth observing how well fitted is the general form of these images for the purpose to be served; the trunk is roughly conical (compare the Himalayan fire-blowers; cf. pp. 51 f. *infra*), and the arms and legs are very short, so that in use the centre of gravity remains low and the vessel cannot be overturned by the reactive pressure of the steam issuing from the high-set mouth; and the arms are so slender that they will not withdraw heat from the trunk and radiate it uselessly. The somewhat odd position of the arms, which is common to all four figures, has to do, I suspect, with ability to alter the situation of the object, or its bearing relative to the fire, at times when it is too hot to handle without the help of some hearth implement. The hand on the knee is a natural and comfortable concomitant of the attitude of kneeling; it is to be seen also in certain bronze candlesticks, presumed to be Italian and of about the thirteenth or the fourteenth century (i.e. of about the same period to which our aeolipile figures would appear to be attributable), which represent a man, coiffured in much the same fashion as our figures but clothed in garments of oriental cut and pattern, with his free hand extended forward and holding the pricket.[1] The posture in those candlesticks so suggests servility that I think we may reasonably ask whether a correspondingly menial attitude is not implied in our aeolipiles in the placing of the hand in contact with the forehead. In the Basingstoke example, as in the Tamworth one, I think that the gesture may, even though the position of the upper hand looks to be for shading the right eye from the light and heat of the glowing coals, conceivably represent a form of salutation or of homage.

Possibly of some considerable moment in our inquiry is a bronze image of a kneeling woman, somewhat dwarfish in build (cf. p. 46 *infra*), belonging to Herr Robert von Hirsch of Basel. This image (pl. XIII, *d*),[2] 12·6 in. in height, shows the woman, unclothed except for an inscribed band round her head, in almost precisely the same attitude and making the same gesture as the men of the Basingstoke and Tamworth aeolipiles. The headband carries a Latin inscription, cast in one with the figure, 'STEPHANUS LAGER [?I^{s}][3] ME FECIT'. The woman is not shown as blowing, and there is no hole between the lips, nor any sign of one having ever been there. The figure parallels the Basingstoke and Tamworth aeolipiles, however, in being hollow and in having a hole in its back, at about the same level as in the Tamworth one. The workmanship, although somewhat unfinished, is better than that of the English aeolipiles, the casting being less rough and the filing more extended, and—presumably because there was no need for service as a fire-blower to be taken into account—the figure is better proportioned. Resemblances in style and in technique to one of the bronze doors of the church of San Zeno at Verona (which, it should be observed, is also on the Adige and not far from Roveredo; cf. note 3, p. 41 *supra*) have contributed to the attribution of the figure to the twelfth century.[1] Of its history, but little of value appears to be known. Herr v. Hirsch has informed me that he bought it in Rome some twenty years ago from Dr. Kurt Cassirer, who at that time said that he knew nothing of its provenance beyond that its vendor had stated that it had been obtained in Venetia—a statement which accords well enough with the inscription on the headband and the resemblances to the work on the Verona door. We are ignorant of the purpose for which the figure was made. While it leans a little forward, instead of holding itself erect as do the Basingstoke and Tamworth figures, and so suggests that it might have borne something on its back, it is hardly likely, as v. Falke has pointed out (*loc. cit.*), to have been one of the figures supporting the basin of a font or the stem of an ecclesiastical candelabrum; he suggested that it might have served, like the figures in oriental garb to which I have alluded above, as the foot of a candlestick, the support for the pricket passing through the hole in the back. I would submit—though, as I have had no opportunity of examining the actual object, with some hesitation—that it might well have formed the principal piece of an andiron;[2] and, further, that the corresponding part of the companion iron had the shape of a man. If such were indeed the case, it would have needed no great power of invention to have adapted a figure of the kind, merely by piercing a hole between the lips, for service as a fire-blower.

---

[1] Cf. v. Falke and Meyer, *op. cit.* figs. 210, 211.

[2] Reproduced by courtesy of Herr v. Hirsch, from whom I have received, besides the photograph, my information concerning the object itself.

[3] These two letters, which are indistinct, have been presumed to represent a contraction of either *inus* or *ensis*. The inscription thus associates the figure with the Val Lagarina, the lower part, near Roveredo, of the valley of the Adige, or, perhaps even more closely, with Villa Lagarina, about two miles north of Roveredo; cf. A. Boeckler, *Die Bronzetür von Verona* (Marburg, 1931), p. 37, with four excellent photogravures (front, back, two sides) of the object. Two views (front, back) are reproduced by v. Falke and Meyer, *op. cit.* figs. 214 *a*, *b*, with text on p. 34.

There is at Vienna, in the collections formerly comprised in the Hofmuseum, a small bronze fire-blowing image (pl. XIV, *a*),[3] about 9·3 in. high and weighing about 7 lb. 4 oz. It represents a woman seated on the ground, the knees of her short legs drawn up in front and her feet flat on the ground, her left hand shading her eyes and her right on her right flank, her cheeks distended as if she were blowing. An original aperture in the crown of her head has been closed with a piece of metal including an external boss of somewhat smaller diameter. Besides the normal hole between the lips there is another, perhaps a result of faulty casting, at the nostrils. Von Schlosser, writing in 1908, suggested that the image was a paraphrase, made in the seventeenth or the eighteenth century, of the Sondershausen 'Püstrich', by then widely known, but Director Dr. Strohmer of the Kunsthistorisches Museum now thinks that it may be earlier, and possibly even medieval.[1] A matter of interest worth notice (though perhaps purely accidental) is that the height of the image is not far different from the heights of the aeolipiles from Tamworth and Basingstoke, 10 in. and 10¾ in. respectively, and its weight not far wide, allowing for the rudeness of the castings, of the 5 lb. 15 oz. and the 6 lb. 11 oz. of those two objects.

---

[1] Cf. Boeckler, *loc. cit.*; v. Falke and Meyer, *op. cit.* p. 34.

[2] Andirons, whose front part consisted of an arched foot surmounted by a rectangular pillar whose front was shaped as a human figure, or had a human head at the top, would seem to have been not uncommon in France in the fifteenth and sixteenth centuries; cf. H. R. d'Allemagne, *Les Accessoires du costume et du mobilier* (Paris, 1928), pls. CCLVI, CCLVIII. A cast-iron figure of a standing monk, with a triangular tenon at the back, presumed by d'Allemagne to be correspondingly part of a fire-dog, is shown *loc. cit.* p. CCLVI, 5. Although I do not recall any medieval Italian andirons, whether of bronze or of iron, consisting in part of human figures, ornamental fire-dogs would appear to have been fairly common in Italy of the fifteenth century, and presumably also of the fourteenth.

[3] Reproduced by courtesy of the Vienna Kunsthistorisches Museum. Concerning it, cf. J. von Schlosser, *Die Kunst- und Wunderkammern der Spätrenaissance* (Leipzig, 1908), p. 113.

A curious bronze (or brass) aeolipile is represented in the line-engraving (on metal) reproduced in fig. 3.[2] It is recorded as having been found while ploughing, in May 1813, in the vicinity of Novomoskovsk (in Ekaterinoslav Government, South Russia). The engraving shows the figure seated on the ground, its left hand on its left knee and its right presumably holding the virile organ, which seemingly has been confused by the draughtsman with the right forefinger. Although the descriptive text implies that the figure represents a woman, the sketch shows the breasts flat and without nipples. The seemingly curly locks of the hair, and perhaps also the shape of the face, suggest that the figure may have been meant to represent a negro. A hole at the lips, and another in the crown of the head, indicate that the object—assumed by its recorder to be a heathen idol—was in reality intended for use as a fire-blower.

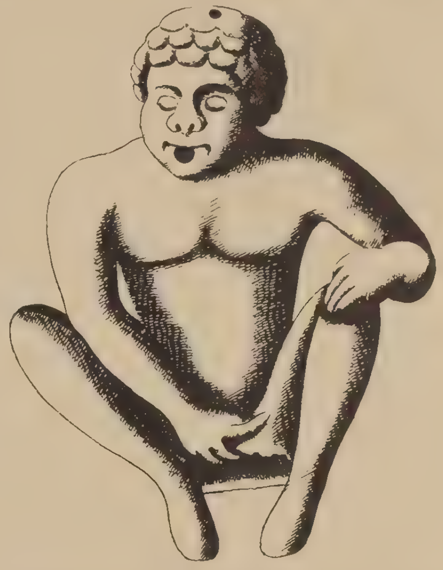


FIG. 3. Sketch of a figure found in South Russia.

A record, dating from about the beginning of the eighteenth century, in the archives of Siddinghausen, in Westphalia, near Söest, tells us of another object, now lost, which almost certainly was a fire-blowing aeolipile. It was recorded as having been discovered in Siddinghausen in 776, to have been removed by Charlemagne, and to have gone to Corvey, where it remained till the war with Sweden. It is called an image of 'Induth' (presumably a misreading for 'Joduth' or 'Juduth', names apparently invented for a supposed Slavic divinity in the sixteenth century). It is described as of small size, cast from bronze (or brass), the right hand holding a sceptre and the left bent towards the side, with a hardly noticeable hole in its head.[3] It was thought to have stood in a gorge near the so-called 'Donnersknapp', and to have brought thunder and downpours of rain if warm water were poured into the hole in its head.[4] Franz comments (*Falsche Slawengötter*, p. 71) on this, pointing out the confused notion of the object's original purpose, and, further, that the date cited as that of its discovery and the reference to Charlemagne were (as I also believe) purely fictitious inventions to permit the object to be accepted as a pre-Christian idol. The suggestion that the object was associable with thunder may be relatable to an observation in the text (not reproduced in pl. XI, *b*) accompanying the seventeenth-century picture of the Sondershausen 'Püstrich', on the broadsheet referred to on p. 32 *supra*, to the effect that when the 'Püstrich' was filled with water and heated, it began *inwendig zu donnern*.

---

[1] Most of the details given above were obtained, at my request, by Mr. J. F. Hayward during a visit to Vienna early in 1949.

[2] Reproduced from 'Ein Sarmatisches oder Sorbisch-Wendisches Götzenbild', in *Curiositäten* . . . (published by 'Vulpius'), vi (1817), pp. 163–5, pl. VI; on the same plate is a representation of the back, and one of the right side. All three representations look to have been taken from sketches rather than direct from the object, and to be unreliable; reproduction from *Curiositäten*, in Franz's *Falsche Slawengötter*, pl. XIII. The descriptive text (p. 163) gives an impression that it, too, has been based on such sketches, as it is somewhat hazy and lacks both dimensions and other precise particulars.

[3] 'Relatio de Idolo Induth reperto in Sinckhausen anno 776. Idolum erat ex aere fusum parvae staturae, dextra sceptrum gerens, sinistram ad latus icurvatam gerens, capite vix notabiliter aperto.'

[4] Cf. W. Jordan, 'Ein Hinweis auf einen weiteren Püsterich von Siddinghausen (Kreis Büren)', supplementary to Franz's article in *Mitteldeutsche Volkheit*, 1940 (cf. p. 32, n. 8 *supra*).

Although I have not found records of superstitious notions, beyond those imaginatively associating the Sondershausen 'Püstrich' with some pre-Christian religion of the ancient inhabitants of Thuringia, attaching to anthropomorphous aeolipiles, I think there may be reasons for suspecting that such notions formerly obtained. The importance apparently attached to possession of 'Jack of Hilton' perhaps hints, as I have remarked (p. 37 *supra*), that he was looked upon as a sort of 'luck'. Again, it has been suggested that Albertus's description (cf. pp. 33 f. *supra*) of the *sufflator* may well have contributed to his reputation—seemingly, since his pupil, Ulrich Engelbrecht, speaks of him as *In rebus magicis expertus fuit*,[1] not wholly posthumous—as a great magician.[2] Then, the Basingstoke image, found deeply buried, and the one recovered from a pond at Henley, would appear to have been deliberately saved from the melting-pot, which is the normal destination of obsolete things made of metal; and so, too, does the Sondershausen 'Püstrich', concealed in a subterranean chamber of a ruined castle. Those circumstances suggest that superstitious notions had become attached to the images in question, resulting in fears lest their destruction might bring evil effects upon, or remove supernatural guardianship from, persons who destroyed them.

Why figures of the sort should be nude is somewhat puzzling. It may be that they were meant as jocular representations of servants assigned to some such duty as tending the fire in a great hall, and that a minimum of clothing, analogous to that worn by other workers exposed to excessive heat, and the band round the head, although perhaps not complete nudity, might thus be accounted for. Again, the hand above the eyes, as if to shade them from the heat and the glare, would accord with a view that they represented tenders of the fire. Or perhaps the nudity was intended, in at least the cases of the male figures, to display the sexual abnormalities of a misshapen dwarf (cf. *infra*).

I have found no reason to associate objects of the sort with any outmoded pagan divinity.[3] The conspicuousness of the sexual organs of the image (pl. XII, *a*, *b*) nicknamed 'Jack of Hilton' has, indeed, from time to time, led people—e.g. our Fellow Thomas Astle, who referred to it as a 'Priapeid deity'[1]—to infer that the image might have had some connexion with phallism. As in the Basingstoke figure there is a corresponding conspicuousness, I have little doubt that the closely similar figure from Tamworth displayed, before it was mutilated, an analogous exaggeration. Since, in spite of the Teutonic suggestions that the Sondershausen image represented a divinity of some kind,[2] there would appear no obvious ground for attributing any religious significance to 'Jack of Hilton', I think we must look for some other reason or reasons for the exaggerations of the sexual organs in the figures of our group. A plausible explanation of the exaggeration of the genital organs in our aeolipiles is prompted by Albertus's remark (cf. p. 34 *supra*)—which, as it stands, appears somewhat senseless—that if the steam-emitting hole be stopped and the aperture 'in the belly' be opened, hot water will spurt out with such force as to scatter the fuel. The possibility is thus suggested that Albertus's aeolipile may have had a forerunner, of which we can now show neither example nor record, which could either emit steam from its mouth or water by way of its genital organ. It is quite clear, from what we know of their construction, that neither the Sondershausen 'Püstrich' nor any one of its English cousins was meant to behave in this manner; but the somewhat unduly marked foramen of 'Jack of Hilton's' organ would seem perhaps to hint at an earlier type of analogous aeolipiles which could serve for a coarse pleasantry.

---

[1] Cf. J. Sighart, *Albertus Magnus* (Regensburg, 1857), p. 80, n. 5.

[2] One is reminded of the name 'fire-devils', by which the Himalayan fire-blowing aeolipiles (cf. p. 51 *infra*) are known to Europeans in India.

[3] Wagener repeats (*loc. cit.*) a tradition to the effect that the Sondershausen 'Püstrich'—which much German opinion long looked upon as a pre-Christian divinity of the Germans or of the Slavs—was an idol adored by the ancient Saxons, and that St. Boniface, who in the eighth century evangelized the Saxons, caused its temple to be destroyed and itself to be buried deep. While it is very probable that this tradition had no more basis in fact than a number of other legends of the same kind associating Boniface with the destruction of particular pagan images in Germany, I think it worth recalling here because of the seemingly curious parallelisms between the Sondershausen 'Püstrich' and its three English cousins—and possibly also because Boniface was educated at Winchester, which is not far distant from Basingstoke where the aeolipile belonging

But I am also inclined to think that we may find in the adaptation of the general form of our aeolipiles to the particular purpose for which they were to be used—an adaptation to which I have alluded above (cf. p. 41 *supra*)—a clue to the reason for the exaggerations. To suit their purpose, the figures have trunks thick-set and heavy, legs unduly short, and arms thin, all of which are characteristic of misshapen dwarfs; cf. pl. XIV, *b*, reproducing, from a painting by Velazquez,[3] a picture of a female dwarf. Commonly a cause of such deformity is some derangement in the pituitary gland, where derangement may also produce hypertrophy of the male sexual organs. That the ancient Romans recognized the existence of some sort of relation between dwarfishness of the misshapen type and enlargement of the sexual organs is witnessed by many surviving statuettes, Roman in origin, of deformed dwarfs having sexual organs much exaggerated in size and sometimes obviously as one feature of a general caricature.

Four typical examples of small bronze statuettes of naked misshapen dwarfs, Roman of about the first century B.C. or the first century A.D., in the Department of Greek and Roman Antiquities of the British Museum, are shown in pl. XIV, *c*.[4] Pl. XIV, *c* 1 (Dept. no. M 333), although its virile organ is but little exaggerated in size, presents in other respects such parallelisms to our aeolipiles as to suggest a connexion of some kind

---

to the Society of Antiquaries was found. The possibility is suggested that a prototype of some sort may have existed either in England or in Germany and have influenced the form of fire-blowers of the 'Püstrich' type in both lands, and that a residue of the connexion survived in Germany in the presumably ill-founded association of the Sondershausen image with the Englishman Boniface.

[1] Cf. 'Observations on Stone Pillars, Crosses, and Crucifixes', in *Archaeologia*, xiii (1800), p. 212.

[2] Cf. pp. 32 f. *supra*.

[3] Velazquez, who painted portraits of a number of the dwarfs attached to the Spanish Court of his time, shows in his picture of Sebastian de Morra, seated on the ground, an excellent example of a male dwarf of this kind.

[4] Photograph by courtesy of the British Museum.

with them. The little bronze parallels the Sondershausen 'Püstrich' peculiarly in having a girdle (here consisting of a cloth with its ends knotted together) hanging from the hips to just above the genitals; and it parallels the Basingstoke and Tamworth figures in having its right hand (which, however, is closed, not open flat) touching its forehead. The dwarf of pl. XIV, *c* 2 (no. M 334) analogously wears a cloth round his waist, but tight enough so that it does not hang down in front, thus further paralleling the Basingstoke and Tamworth aeolipiles, and, except for the absence of the front droop of the girdle, to some extent resembling the 'Püstrich'. The dwarfs of pl. XIV, *c* 3 (no. W 225) and XIV, *c* 4 (no. M 340) are good examples of the caricaturing of the association, presumably exemplified also in the English aeolipiles, of misshapen dwarfism with hypertrophy of the sexual organs.

In view of the resemblances between our group of fire-blowing figures and images of misshapen dwarfs I would suggest that the squat, bulky receptacle of a simple aeolipile for fire-blowing, raised a little above the ground, provided with projections to facilitate manipulation, and having an opening near its top through which the steam should issue, might well have inspired the idea of giving the contrivance the form of a misshapen dwarf;[1] and this the more so since dwarfs often were attached to households of importance and, if not retained for amusement or other distraction (we may recall in this context the diverting roles assigned to 'Jack of Hilton' and the Tamworth aeolipile), presumably were allotted such lowly indoor tasks as attending to the fires. And it would have been but a short step for medieval humour to prompt the addition, to an image of such a dwarf, of the sexual abnormality which frequently accompanied a misshapen dwarf's other deformations. In 'Jack of Hilton', and conceivably also to some extent in certain other fire-blowing aeolipiles, it would seem not improbable that the prominence of the sexual organs might have been intended as a coarse pleasantry referring to the effect, well known to physiologists and still recommended by the medical profession, of whistling as a measure for relieving a retarded discharge of the urine.

If such anthropomorphic aeolipiles do, as I think, indeed represent dwarfs, we may well perceive in that circumstance reason for the nickname 'Jack' for the Hilton fire-blower, best known of the English ones. The *Oxford English Dictionary* gives, under 'Jack' as a noun, a number of senses embodying a notion of smallness. Thus, 'In some uses *jack* has a diminutive force or meaning, denoting things which are smaller or slighter than the normal ones';[2] 'In names of animals (sometimes signifying *male*, sometimes *small*, *half-sized*)';[3] 'In popular names of plants. Sometimes with the sense "Dwarf, undersized" ';[4] 'said of or applied to things of smaller than the normal size'.[5] Furthermore, there would appear to be some reason (cf. p. 32 *supra*) for thinking that the name 'Püstrich', applied to the Sondershausen image, may be a modification of an obsolete word, *parstuck*, signifying a dwarf or a pygmy. Again, the *O.E.D.* tells us[6] that 'jack' is also 'Variously applied to a serving-man or male attendant, a man who does odd jobs, etc.', so giving us some ground for thinking that the popular name for the

---

[1] Just as the bird-forms of Himalayan 'fire-devils', with wings and a tail, would appear to have developed out of simple conical vessels having a nozzle pointing downward and, in a way, resembling a bird's bill; cf. p. 51 *infra*.

[2] Cf. 'Jack', sb.¹, 33.

[3] *Ibid.*, sb.¹, 37.

[4] *Ibid.*, sb.¹, 38.

[5] *Ibid.*, sb.³

[6] *Ibid.*, sb.¹, 4.

Hilton figure may have received at least support, if it did not indeed perhaps originate, in the use of that figure as an attendant for the fire.

We may recall in this connexion a curious parallel, worthy of note even should it prove to be one occasioned by mere chance, between the European anthropomorphic fire-blowers and certain pygmy tribes in Africa—possibly some of the very tribes known to the classical writers by repute if not indeed by captive individuals. It is recorded by Sir James Frazer[1] that 'the dwarf tribes of Central Africa "do not know how to kindle a fire quickly, and in order to get one readily at any moment they keep the burning trunks of fallen trees in suitable spots, and watch over their preservation like the Vestals of old" ', and that 'Another writer says that these dwarfs "keep fire alight perpetually, starting it in some large tree, which goes on smouldering for months at a time" '. The parallel between dwarf-shaped fire-blowers and the African pygmies mentioned is obvious; less obvious, but perhaps worthy of scrutiny in the same connexion, is the relation between African natives and the tending of European hearth-fires as reflected in the shaping of fire-blowing aeolipiles as a negro's head (cf. pp. 48 f. *infra*)—a notion which might, of course, have been inspired by nothing more remote than the common employment of negroes as household slaves in Renaissance Venice. A passage of Pliny[2] is possibly of some interest in the questions of the associations of negroes, whether dwarf or normally proportioned, with European fire-blowing aeolipiles: it reads:

> The whole of this country has successively had the names of Ætheria.[32] ['32. Hesychius says that it was also called Aëria'] . . . It is not at all surprising that towards the extremity of this region the men and animals assume a monstrous form, when we consider the changeableness and volubility of fire, the heat of which is the great agent in imparting various forms and shapes to bodies. . . . Some writers have also stated that there is a nation of Pygmies, which dwells among the marshes in which the river Nile takes its rise, while on the coast of Æthiopia . . . there is a range of mountains of a red colour, which have the appearance of being always burning.

The anthropomorphous aeolipiles discussed above are, with the possible exceptions of the one at Vienna and the one in Russia, medieval in character and presumably medieval in date. Literary sources indicate that analogous aeolipiles were in use at least in Italy during the Renaissance. In the plan for an ideal city, prepared by the Florentine Antonio Averlino, called Filarete, for his patron Francesco I Sforza and finished presumably in 1564, the architect-sculptor describes a contrivance of the kind for stimulating combustion in the fire-place of the great hall of the ruler's palace. After ascribing the carving, whose design he sets forth in some detail, of the fire-place's stonework to the sculptor Luca della Robbia, he says that the fire-dogs should be made thus: the portion which is to support the wood is to be of thick iron, and in front of this is to be a bronze vessel whose cover is shaped like a naked boy with out-puffed cheeks, so contrived that when heated it will blow very strongly into the fire or wheresoever it may be turned, and which is to be made of thin metal well soldered.[3] Again, we are told by Marcellus Palingenius (= Pietro Angelo Manzolli), in Latin verse, of an analogous appliance which he saw when he was in Rome during the Papacy of Leo X (1513–31). This was a figure made of earthenware in the form of a youth,[1] at whose mouth was a narrow orifice and into whose hollow trunk water was to be poured; then, placed near a fire, steam would come forth from the hole at the mouth, issuing as if it were a strong wind.[2] Although Palingenius does not say that such figures were used in Rome as fire-blowers—they may indeed have served as no more than scientific toys—they could presumably well have been so used. I have, however, been unable to find either a surviving example of such a figure, whether unglazed or glazed, or any fragment (e.g. a hollow head having a very small hole at the mouth) plausibly recognizable as such.

---

[1] *The Golden Bough: The Magic Art* (1917), ii, p. 255, quoting G. Casati, *Ten Years in Equatoria* (1891), i, p. 157, and Guy Burrows, *The Land of the Pigmies* (1898), p. 199.

[2] *N.H.* vi, 35 (on Æthiopia); cf. Bostock and Riley's translation, Bohn's ed. (1855), ii, pp. 101 f.

[3] 'Erano li alari in questa forma fatti: quella parte che sostenuano le legnie, erano di grosso ferro; dalla parte dinanzi era uno uaso di bronzo; el couerchio era uno putto nudo, che ghonfiaua le ghote. Et in modo era congegniato, che soffiaua nel fuoco fortissamente, quando erano al fuoco

Courajod was fortunate when he sought for one of the metal heads for blowing a fire by steam such as was recorded in the accounts of King René of Anjou as having, in 1448, been brought from Rome.[3] After having inquired of many European museums and private collectors for a head of the sort, he at last discovered one (see pl. XV, *a*)[4] at Venice, in the Museo Correr, according in form with the record in question and in the essentials of its construction with the fire-place accessory described by Filarete (cf. *supra*); its only orifice was the small one at its mouth, and having no trace of a handle, a neck, or a tap, clearly it had not served as an aquamanile.[5] It is fashioned of sheet-copper, shaped as a bust of a young negro, his mouth modelled as if blowing, clothed in a garment of figured cloth; being filled with water to the level of the mouth and set beside the fire in a fire-place, it would emit steam from its mouth with such force that it could be used to blow the fire.[6] The object has a look of being Venetian, probably of about the last quarter of the fifteenth or the early sixteenth century. Courajod gave (*loc. cit.*) reasons for his conjecture that the head might have

---

a scaldarsi, o doue l'uomo gli auessi uoltati. Nel modo, che erano fatti, si è questo: erano uoti e ben saldati, e sottili: e empieuansi d'acqua per lo bucho della boccha, cioè per lo foro proprio, donde soffiauano, ch'era nel mezzo della boccha; con uno bucho insul capo, i[l] quale si turaua poi bene inmodo, che none sfiataua da altro luogho se non è dalla bocca; e mentre duraua quella acqua, ma cessauano di soffiare, come fusse uno mantacho.' Cf. Wolfgang von Oettingen, *Antonio Averlino Filarete's Tractat über die Baukunst* (i.e. *Trattato dell' Architettura*) (Vienna, 1890), pp. 309 f.

[1] Compare Konrad Kyeser's 'Philoneus', which he wrote might be made either of metal or of earthenware; cf. p. 35 *supra*.

[2] Cf. Marcellus Palingenius, *Zodiacus vitae* (ed. Lyons, 1589, p. 339):

> Vidi ego dum Romae decimo regnante Leone,
> Essem, opus à figulo factum iuvenisq́; figuram,
> Efflantem angusto validum ventum oris hiatu;
> Quippe cauo infusam retinebat pectore lympham,
> Quae subiecto igne resoluta exibat ab ore,
> In faciem venti validi, longeq́; furebat.
> Ergo etiam ventus resoluta emittitur vnda,
> Dum vapor exhalans fugit impellente calore.
> Namque fugare solent sese contraria semper.

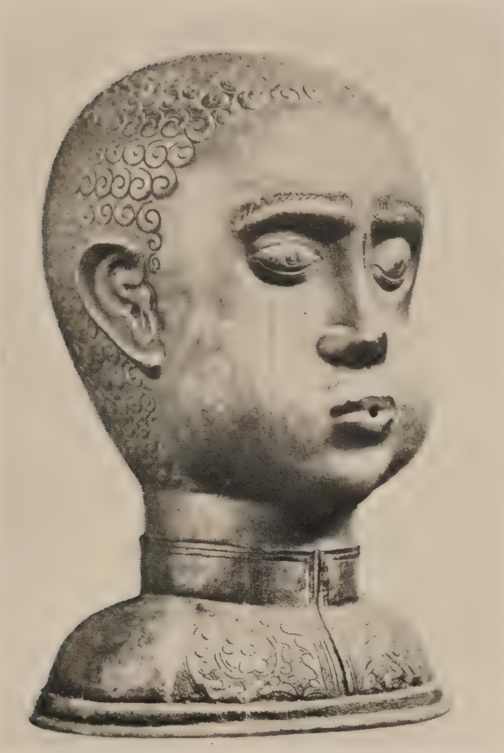
An English rendering of the passage is given (under 'Aquarius') in *The Zodiake of Life*, a translation by Barnabe Googe, printed in London in 1565.

[3] '17 Octobre 1448.—"A Jacobo de Becutis, serviteur de Messire Bianchardin, le XVII^{e} jour dudit mois, VI florins, que ledit seigneur luy a donnez en considéracion de ce qu'il luy a apporté de Romme une teste d'arain qui souffle le feu" '; cf. A. Lecoy de la Marche, *Extraits des comptes et mémoriaux du roi René* (Paris, 1873), p. 296, extract 666.

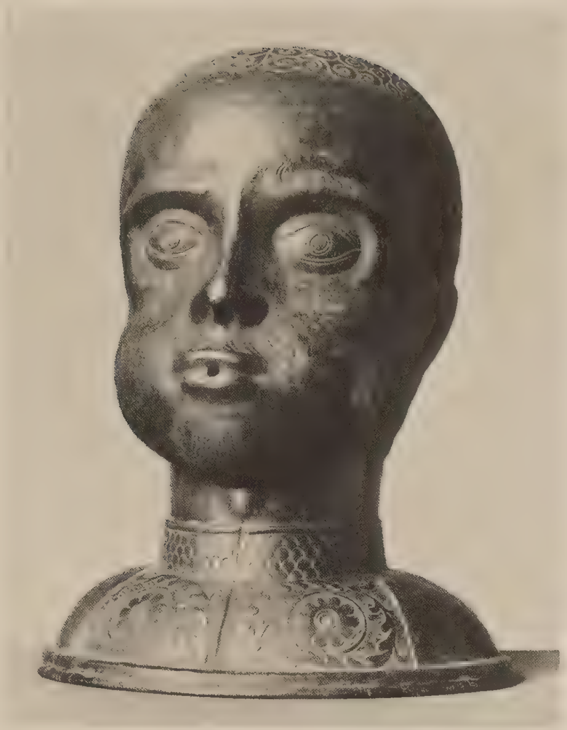
[4] Reproduced from *Gaz. archéologique*, xii (1887), pl. 39.

[5] Cf. L. Courajod, 'Quelques sculptures en bronze de Filarete', *loc. cit.*, p. 290.

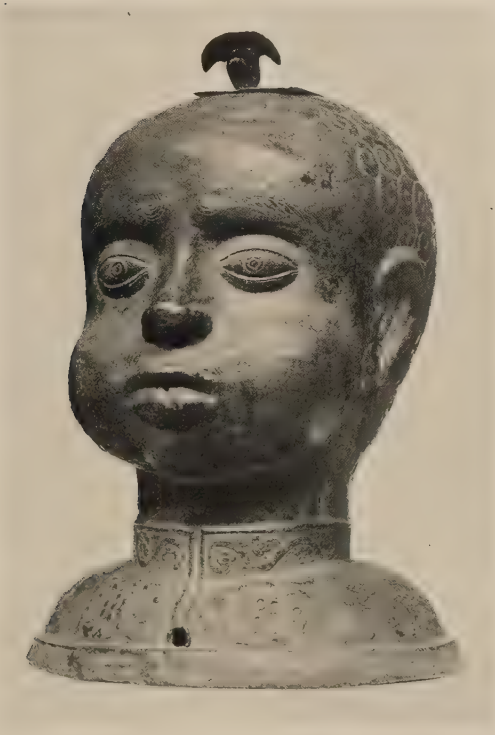
[6] Cf. *Guida illustrata del Museo Civico Correr di Venezia* (Venice, 1909), p. 76: 'È il busto a tutto tondo di un ragazzo moro colla bocca semiaperta in atto di soffiare. Era destinato a servire come attizzatoio. . . .' V. Lazari, in his *Notizie delle opere d'arte e d'antichità della Raccolta Correr di Venezia* (Venice, 1859), failed to apprehend the purpose of the piece, saying (p. 195) only '1031. Busto di fanciullo etiope, con vesta a rabeschi, nello stile italiano del resorgimento, i ricciuti capelli sono regolamente condutti a bulino; la bocca è in atto di soffiare e perforata, a contener forse un tubo per isgorgo d'acqua. A. 28c.'



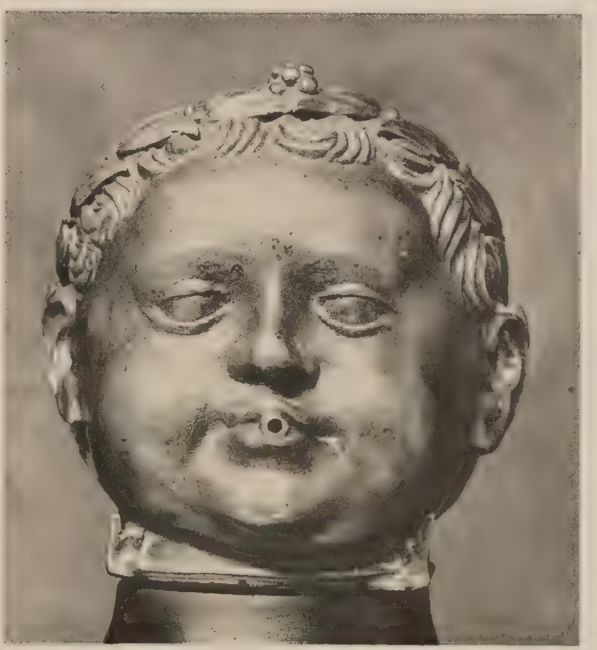
a. Sheet-copper head in Correr Museum, Venice



b. Sheet-copper head in Hamburg Museum

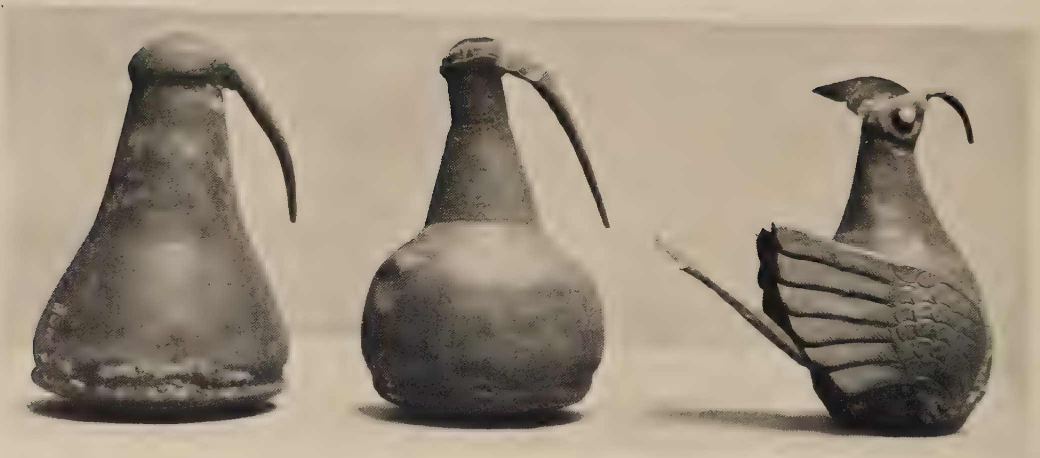


c. Sheet-copper head in the British Museum

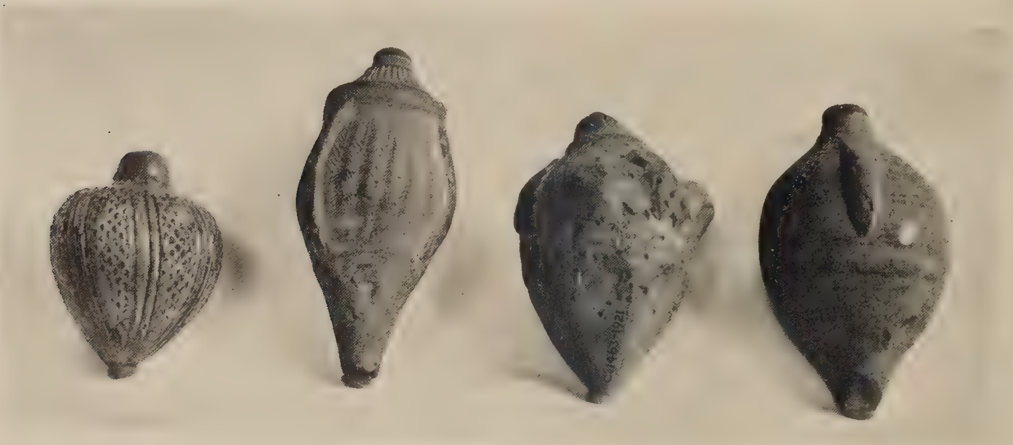


d. Cast bronze head in Musée du Louvre

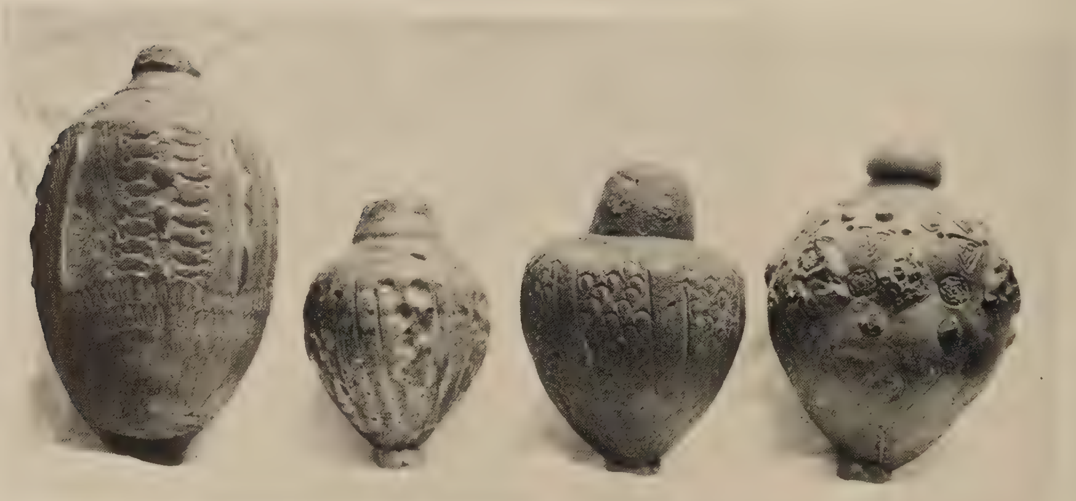
Published by the Society of Antiquaries of London, 1951



a. Himalayan steam fire-blowers in the British Museum



b. Thirteenth-century Islamic pottery vessels in the Victoria and Albert Museum



c. Thirteenth-century Islamic pottery vessels in the British Museum

Published by the Society of Antiquaries of London, 1951

been made by Filarete himself, but to me they appear somewhat far-fetched and not very convincing; and, furthermore and quite apart from the head being very different from the naked putty of Filarete's andirons, the technique practised in it is that of a coppersmith, decidedly unlike that of a sculptor in bronze.

A copper bust in the Hamburg Kunstgewerbemuseum, so similar to the Museo Correr's bust and to a bust in the British Museum as to suggest that all three were made in the same workshop, is reproduced in pl. XV, *b*.[1] Its height (26 cm.) is almost precisely that of the bust in the British Museum. Brinckmann describes it[2] as made of embossed sheet-copper, with its bottom soldered in place, and as having at the back a socket for a wooden handle. It represents the head of a negro with flat curly locks, a moustache, and a small beard; a small hole between the lips is its only opening and serves both for filling it by immersion[3] and as the outlet for the steam.

Dr. Erich Meyer, of the Hamburg Museum, has written me of another head of the same sort, but of recent make, which was offered for sale in western Germany in 1927. A photograph of this object suggests that it was made from a picture (perhaps the one given by Brinckmann), whose details were misunderstood by the copyist, of one of the Venetian heads described above. The head, 26·5 cm. tall, had little patches of gilding on its surface, and a small door—on which was based a suggestion that it had served as a reliquary—at the back.

The British Museum's bust (pl. XV, *c*)[4] is of stout copper sheet, embossed. It represents a negro, again with flattened curly locks and a moustache and beard, and again wearing a garment of figured material. Its height is approximately 10 in.; the hole at the mouth is about the diameter of a stout modern hatpin. It is now entirely unfit for the purpose for which it was made, there being a rectangular hole, about 1¾ in. square, cut in the crown, once closed by a loose flap of which only the hinge remains, and several other holes, ¼ in. or more in diameter, in various parts.

Dr. Erich Meyer has brought to my notice a fourth head, 24 cm. in height and like the Correr, Hamburg, and British Museum examples. Projecting from each side, near the ear, is a rectangular loop of stout wire, presumably intended to facilitate the lifting of the head. At one time in the R. von Kaufmann Collection, in Berlin, it later passed to the Camillo Castiglioni Collection, in Vienna,[5] dispersed at Berlin in November 1930. No. 333. It is reproduced on a small scale in pl. 79 of the Catalogue of the Castiglioni Sale.[6]

Among the Renaissance bronzes in the Louvre Museum is a small head, about 4¾ in. (12 cm.) in height and hollow, cast in a light-coloured bronze;[7] see pl. XV, *d*.[8] A tube-like circular hole between the lips indicates that it was made for use as a fire-blowing aeolipile. Émile Molinier, who prepared the text concerning it in the *Catalogue*, recognized this, and recalled the citations of Courajod,[1] his predecessor at the Louvre, as justification. He attributed the object, on grounds of style (and as confirmed by the nature of the bronze), to Giovanni Boldu, a medallist working at Venice in the second half of the fifteenth century. The head looks as if it might well have served, as did simple bronze knobs of conventional forms, as the top of a large fire-dog.

---

[1] Reproduced by courtesy of the Hamburg Museum from its negative 2655.

[2] Cf. J. Brinckmann, *Das Hamburgische Museum für Kunst und Gewerbe* (Hamburg and Leipzig, 1894), p. 764, with line-engraving of the object.

[3] Presumably while the enclosed air or water-vapour is hot, so that as it contracts on cooling the water may be sucked in; cf. p. 30 *supra*.

[4] Reproduced by courtesy of the British Museum.

[5] Cf. L. Planiscig, *Collezione Camillo Castiglioni: Catalogo dei Bronzi* (Vienna, 1923), no. 9.

[6] Cf. O. von Falke, *Die Sammlung C. Castiglioni* (H. Ball and P. Graupe, Berlin, 1930).

[7] Cf. *Musée du Louvre: Catalogue des Bronzes et Cuivres* (Paris, 1904), no. 39, pp. 53 f. (text), 51 (fig.). The head was acquired in 1893.

[8] From a negative Giraudon.

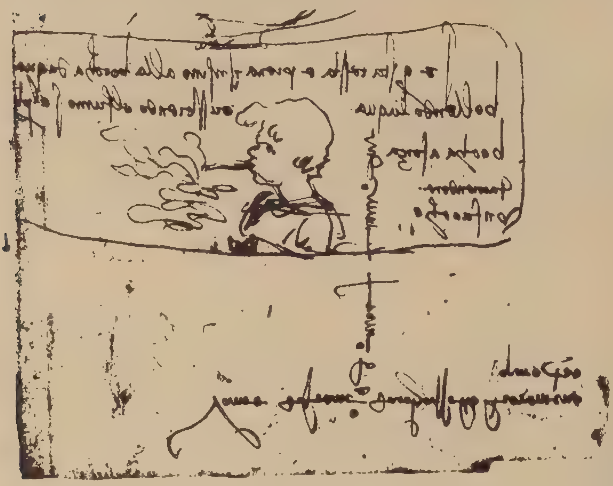


FIG. 4. Note by Leonardo da Vinci.

Leonardo da Vinci has left us a sketch (see fig. 4)[2] of a head-shaped aeolipile accompanied by a note in mirror-writing stating 'Se questa testa è piena insino ella bocca d'acqua, bollendo l'acqua, e uscendo el fumo sol per la bocca, à forza d'accendere un fuoco'.[3]

The utilization of head-shaped aeolipiles as boilers in apparatus for obtaining mechanical work from steam would seem, although not strictly germane to the subject of fire-blowers, worth recalling here. Inspired by the 'wind' obtainable from an aeolipile—and perhaps to some extent by contemporary pictures (including those embellishing maps) in which wind is symbolized by a blast issuing from the mouth of a human head—several seventeenth-century writers on engineering or experimental physics proposed devices in which a jet of steam issuing from an aeolipile shaped as a human head might turn a wheel having vanes set regularly round its circumference. Giovanni Branca, architect of Loretto, for example, in 1629 described and illustrated a contrivance having a boiler formed as a circular deep basin covered by a bust of a man from whose mouth there could issue a jet of steam which should impinge forcefully on the vanes of a wheel, set in a horizontal plane, driving by means of gears two pestles for pounding substances in mortars—a device which, failing important changes in the forms of the jet and the vanes, in practice could have served only as a toy.[4] And Kircher, some half-century later, portrayed a wheel with vanes set all round its circumference and standing vertical, blown upon by a pair of aeolipiles shaped as human heads at opposite ends of its horizontal diameter, the jet from one head being directed upward against the vanes, the jet from the other downward.[5] We may recall, too, Bishop Wilkins's mention, about the middle of that same century, of the possibility of employing aeolipiles for the turning of spits or for other domestic purposes (cf. p. 28 *supra*).

---

[1] Cf. *supra*.

[2] Reproduced from *Il Codice Atlantico di Leonardo da Vinci nella Biblioteca Ambrosiana di Milano*, published by the R. Accademia dei Lincei (Milan, 1894–1904), pl. MCCCLXXIX (a photographic reproduction of fol. 400 v.). The *Codex Atlantico* is datable 1490 to perhaps 1518.

[3] *Ibid.*, Text, p. 1309.

[4] Cf. Giovanni Branca, *Le Machine* (Rome, 1629), pl. XXV (of first section of book). His illustration is reproduced by H. W. Dickinson, *A Short History of the Steam Engine* (Cambridge, 1939), p. 193; and by Feldhaus, *Die Technik*, fig. 128.

[5] Reproduced in Kestler's *Physiologia Kircheriana* (cf. p. 28, n. 5 *supra*), p. 173.

Whether actual application of aeolipiles to domestic purposes, such as those for which the English kneeling figures cast in bronze and the Italian sheet-copper busts, for example, served, was ever widespread, I do not know. It would seem, certainly, to be rare at present. I have not found any record of such application among the peasantry of modern Europe; but that is mere negative evidence, and should not be regarded as at all conclusive. Not only may I have failed to discover existing records, but potential recorders may have omitted to describe examples they saw in use, thinking them too trivial or perhaps too commonly known to be worthy of special notice. Ordinary bellows, or long blowing-tubes, may—even though aeolipiles used in industry coexisted with them—indeed have met normal European domestic requirements, so that in Europe domestic applications of aeolipiles tended to be prompted less by practical considerations than by a liking for novelty or a bent for diversion. The only current use of steam fire-blowers for domestic purposes of which I have learned occurs in the Himalayan region, where small metal ones, called by foreigners 'fire-devils', apparently served for household fires as well as for metal-workers.

Three Himalayan examples, made of sheet-copper and recorded as coming from Tibet, now in the British Museum, are reproduced in pl. XVI, *a*.[1] Their basic form is that of a cone from whose apex descends a slender nozzle having a small hole at its lower end. Quite commonly this basic form is enriched, as in the middle example, by a conventionalized representation of the head of a bird, an embellishment obviously suggested by the resemblance of the long nozzle to the bill of a wading-bird. Sometimes, as in the aeolipile at the right and in others seemingly still less suited for actual use, further modifications have brought about an even closer approximation to an avian shape.[2] About half a century ago 'fire-devils', of the basic form at least, were in use at Darjeeling, at that time a meeting-place of Tibetans, Bhutias, Lepchas, Nepalese, and other peoples of the high Himalayas, so that, even had they been originally confined to one native group, they must by then have been known widely among the Himalayan peoples. I have been unable to learn of the use of fire-blowing aeolipiles in any other part of India, excepting Almora (which, although in the hills, is not Mongolian), whence came two 'fire-devils' now in the Cambridge Museum of Archaeology and Ethnology, of which Professor J. H. Hutton has kindly informed me; but as Almora is situated close to Nepal, I suspect that their presence there owed more to Nepalese influence than to Indian.

The seemingly isolated occurrence of aeolipile fire-blowers in the Himalayas raises the interesting question whether they might have been invented in that region and not inspired from some foreign source. It would seem to me by no means unlikely that they may be an example of such independent invention as has been looked upon, at least by extremists of the 'diffusionist' school, as very improbable. Greek introduction into Afghanistan by Alexander's soldiers, with subsequent filtration eastwards to India, might perhaps be advanced to account for their presence in the Himalayas, were it not that the Greek aeolipiles of which we have knowledge appear to have been scientific toys rather than the sort of thing with which soldiers or settlers would be acquainted. Somewhat less improbable would seem transmission through Arabic translations of Greek authors. Again, there appears a possibility that the extensive traffic which formerly crossed Central Asia might have brought knowledge of aeolipiles to the caravan-routes, and that from them it passed to the Indian side of the Himalayas; but I know of no traveller's account which would seem to support an inference to that effect. If among the enigmatic pottery vessels to which I shall refer below there were indeed fire-blowers, knowledge of such fire-blowers conceivably might have been spread by the caravans, some of which started their journeys from regions in which large numbers of those curious objects have been found; but for the dissemination of such knowledge I can offer no evidence from the caravan-routes themselves.

---

[1] Photograph by courtesy of the British Museum.

[2] One at Oxford, in the Pitt Rivers Museum, has its wings and a fan-like tail riveted, as if on pivots, to the receptacle. The rivet-holes have, however, by some means been rendered water-tight.

I am inclined, however, to think that on the whole the circumstances in the high Himalayas so favour an independent invention of aeolipile fire-blowers and their subsequent adoption there, that we may well believe it to have taken place. The rarefied atmosphere at those great heights presents much less resistance to the escape of steam from the spout of a closed kettle in which water is boiling than does the atmosphere at sea-level, so that no great imaginative effort is needed to see in such escaping steam a parallel to breath used to blow a fire; while, further, a chance proximity of the steam to the glowing coals might well induce a current of air sufficiently stimulating combustion to attract notice and thus to suggest a contrivance for purposely directing a jet of steam upon burning coals. Then, too, the atmosphere at those high altitudes contains so little oxygen that combustion is slowed down; and the situation is worsened by the poor quality of most of the fuel there available. Both physical labour, such as is needed for operating a hand-bellows, and the employment of the breath for blowing are, in the rarefied air of the high Himalayas, far more exhausting than at normal altitudes, and they provide a sound inducement for continuing the use of such a contrivance once it has been tried.[1]

In many regions where Islamic culture prevailed during the later centuries of our Middle Ages—Egypt, Syria, Palestine, Caucasus, Armenia, Persia, Turkistan, among others—there have been found on ancient sites great numbers of vessels of a curious type, almost all of them of earthenware but some few of glass. Often their bodies have somewhat the shape of an inverted pine-apple, being largest near the top and tapering to a point, more or less blunt, at the bottom; a short neck, pierced by the only opening to the interior, rises from the centre of the flattish top. Some of them are more globular as to body; the bodies of others are lemon-shaped, more or less elongated. Commonly they are heavy for their size, with walls of both their bodies and their necks not infrequently, somewhat surprisingly, up to 0·4 in. thick. Some of them lack ornament, but most of those, whether complete or only fragmentary, preserved in museums or reproduced in print, are embellished in some way. For a few examples see pl. XVI, *b*, *c* (upper row in the Victoria and Albert Museum, lower row in the British

---

[1] For a comprehensive discussion of the factors leading to chance discoveries and their exploitation, and/or deliberate invention, see H. S. Harrison, 'Opportunism and the Factors of Invention', in *American Anthropologist* (New Series), xxxii (1930), pp. 106–25.

Museum). Although they vary considerably in dimensions, a large proportion of them are about 5–7 in. in height. Their orifices, always circular, vary in diameter from approximately 0·14 in. to several times that figure.

The principal general hypotheses hitherto advanced to explain the use of the vessels in question are four: (*a*) that they were filled with inflammatory liquids and employed as incendiary bombs;[1] (*b*) that they were made for the transportation and the subsequent storage of mercury; (*c*) that they were architectural details; and (*d*) were used perhaps as lamps, perhaps as containers for wine[2] or perfumes[3] or other substances, perhaps occasionally as sprinklers for scented liquids or, heated, for the production of perfumed or medicated steam. The first of these hypotheses, to the effect that they were fire-bombs, presented plausibly by Major Gohlke,[4] learnedly and after analytical examinations of surviving fragments and experiments (including a number on means of ignition practicable and available in the thirteenth century) with accurate modern copies, although perhaps too wide in its scope, is the one now most commonly accepted. That incendiary bombs, charged with 'Greek fire' or something of the sort, or with some highly inflammable liquid which could be ignited by fuses or burning arrows or analogous means, were indeed employed by Islamic peoples of the regions where our pottery vessels are now unearthed, is witnessed by literary records[5] as well as pictorially,[6] and we need therefore have little hesitation in believing that many of the pottery vessels of the forms with which we are here concerned were made for use as fire-bombs.

For the hypothesis that the vessels served to contain mercury, Lenz presents such good and reasoned arguments[7] that I think we are entitled to believe that many of them—but probably not those, in which lies our particular interest, whose surfaces are ornamented and whose orifices are very small—indeed served in that way. There would seem to be little, if anything, to encourage or to recommend the hypothesis that many (if any) of the vessels were employed as details of architectural ornament.

---

[1] Compare the incendiary aeolipiles mentioned on p. 34, n. 2 *supra* as shown in sixteenth-century editions of Vitruvius.

[2] For a discussion of one found at Samarra (cf. Iraq Government, Dept. of Antiquities, *Excavations at Samarra, 1936–1939*, Bagdad, 1940, Part II, pp. 3 f. and pls. VIII, IX; and H. B. Serjeant, in *Ars Islamica*, xi+xii, 1946, pp. 203 f.), whose upper surface carries an inscription, incised in Cufic characters, at first read as referring to wine but subsequently explained as a simple beneficent phrase of the kind placed on Islamic objects of many sorts; cf. J. Sauvaget, 'Flacons à vin ou grenades à feu gregeois?', in *Annuaire de l'Institut de Philologie et d'Histoire orientales et slaves*, ix, 1949, pp. 525–30. Sauvaget argues in favour of the hypothesis that the vessels were grenades for flinging 'Greek fire'; he does not, however, suggest any reason why such an inscription should be put on an object to be thrown at any enemy with the expectation (as he says of the pottery 'grenades') that it would break into pieces.

[3] Cf. (E.) Arthur Lane, *Early Islamic Pottery*, London, 1947, pp. 27 f.

[4] Cf. W. Gohlke, 'Handbrandgeschosse aus Ton', in *Zeits. für historische Waffenkunde*, vi (Dresden, 1912–14), pp. 377–87, with pictures of many examples and tables of sizes, weights, thicknesses, etc. Further examples have been reproduced by, among others, F. Sarre, *Baalbek*, iii (Berlin and Leipzig, 1925), pp. 134 f.; A. M. Tallgren, *Collection Zaousaïlov au Musée National de Finlande à Helsingfors*, ii (Helsingfors, 1918), pl. V; and Lenz (cf. n. 7 *infra*).

[5] For a number referring to the Islamic naphtha-troops and their weapons and protective clothing, cf. Eilhard Wiedemann, 'Beiträge . . . VI. zur Mechanik und Technik bei den Arabern', in *Sitzungsberichten der Physikalisch-Medizinischen Societät in Erlangen*, xxxviii (Erlangen, 1906), pp. 39 f.

[6] Cf. Gohlke, *op. cit.* Interesting in this connexion is a drawing of the mid-thirteenth century of a battle between English and French ships, in which one man is depicted using a loop to sling a round-bottomed bottle, and another is about to discharge an arrow whose head is in the neck of a similar bottle. The drawing is reproduced from MS. 26, Corpus Christi College, Cambridge, f. 52, by M. R. James, 'The Drawings of Matthew Prior', in *Walpole Society Volume*, xiv (1920), pl. IX.

[7] Cf. E. Lenz, 'Handgranaten oder Quecksilbergefässe?', in *Zeits. für hist. Waffenkunde*, vi, pp. 367–76, including photographic reproductions of seventeen examples of various forms. For counter arguments cf. Gohlke, *op. cit.*, pp. 379 f.

So far as I know, the suitability of certain of the vessels—those with orifices of the smallest diameters—for use as fire-blowing aeolipiles has not hitherto been pointed out. Charged with water and laid on or near to a mass of glowing coals, they could emit steam in a jet strong enough to stimulate combustion, while their shape and the distribution of their weight when charged could permit them to be laid with an inclination suitable for such use, and their thick walls (approximately 0·4 in. in some fragments with apertures of the order of about 0·15 in.) of hard-burnt clay would have enabled them to withstand very considerable internal pressures. Furthermore, the ornamentation, which usually is of conventional character, of many such vessels suggests that they were not meant to be thrown at an enemy but were rather for repeated use in some way in the household. A vessel shaped in a mould giving relief-ornament at the same time as it gave the form would have been no more difficult to make than one with a plain surface, and such relief-ornament might have given a firmer grip for throwing. But in some cases the surface of a vessel of the sort is enamelled; and in others (as in those reproduced in pl. XVI, *b*, *c*) it has been ornamented by means of small stamps repeatedly applied, or by pieces of clay individually moulded and stuck to the surface, or by ridges shaped by hand, or by incised lines. I find it hard to think that labour should have been so wastefully employed as in applying such decoration to a fire-bomb. But I have no direct evidence to support the conjecture that some of them may actually have served as steam fire-blowers.

For an incendiary bomb to be charged with naphtha, the combination of thick walls with a small orifice would appear to be of some considerable value, permitting its employment as an aeolipile emitting a flaming jet, as did Kyeser's 'Philoneus' (cf. p. 35 *supra*)—which, it may be recalled, likewise could be made of earthenware.[1] Gohlke found in his fire-experiments with reproductions of vessels of the present kind, that if they did not break on impact they might come to rest in such a position that the contents would flow out and be ignitable in active flames already lighted by burning objects; and, further, that if they fell in a patch of flames the heat would cause vaporization and the vessel would spout forth, according to the position in which it lay, either flaming vapour or flaming liquid. I have not seen it hitherto pointed out that this latter observation may perhaps provide a clue to the reason for thick walls of hard material; it suggests that the walls were thick so that they might for a considerable time retain heat imparted to them, and during that time should continue to volatilize the liquid within them, so that vapour (or highly inflammable liquid, should the slope of the vessel bring the orifice below the surface of the liquid) would be violently expelled through the orifice. Thus could be overcome the difficulty, experienced by Gohlke and presumably found by the Islamic users of fire-bombs which they could not be sure would break on impact, of igniting the liquid by means of a burning cord or a glowing piece of tinder, and the vessel would spout fire, perhaps from the moment it was launched, but at least from the moment it reached its target. The preliminary heating of the vessels would naturally have to be carried out well away from any flame or anything else hot enough to ignite the vapour (Gohlke speaks of the liquid presumably used in the Islamic fire-bombs as ignitable at about 40° C. = 104° F.), but this could easily be done by standing the vessels upright in a deep tray of hot sand, their pointed bottoms admirably adapting them for this. And if the vessels were intended to be heated by such means, it would seem possible that the ornamentation in relief—if indeed vessels of the sort which were made for use as bombs are to be included among those so ornamented—had the purpose of holding them steady in the sand while their contents were in more or less violent ebullition. Vessels warm enough to expel a jet of inflammable vapour could be thrown by hand, even without the protection of a glove such as we may presume to have been worn as a safeguard by the naphtha-troops, but catapulting, when practicable, might well have been regarded as safer. Although aeolipile fire-bombs would have been fully fitted for the defence or the siege of a fortified place, it would appear hardly likely that the special fire-troops, who went into battle each carrying a few bombs, would have used them; more probably their missiles were as light in weight as practicable and broke easily on impact.

---

[1] There may be recalled, too, in this connexion, the earthenware steam fire-blower that Marcellus Palingenius saw in Rome (cf. p. 48 *supra*).

I have gone into the matter of these earthenware vessels at some length mainly because I am inclined to think that some of those with small orifices may perhaps have suggested the reintroduction of steam fire-blowing aeolipiles into western Europe, where they would seem to have begun to reappear at just about the same time. We may recall, for example, Albertus's thirteenth-century account of an anthropomorphic aeolipile, and the similar style—presumably of a time but little later—of the 'Püstrich' and his English colleagues. It would seem very probable that some of the vessels suitable for use as fire-bombs were, as suggested long ago by proponents of the hypothesis assuming that use, employed against the Crusaders. If others of the vessels were at that time utilized by the Moslems as steam fire-blowing aeolipiles, report of them might well have been brought to Europe by returning Crusaders and have inspired Europeans to reapply principles with which they had long been acquainted through the writings of the ancient philosophers.

The Defences of the Citadel of Damascus; a Great Mohammedan Fortress of the Time of the Crusades

By D. J. CATHCART KING, Esq., M.C., LL.M.

[*Read 12th May 1949*]

THE great medieval citadel of Damascus has not apparently received any serious notice in English; the important monographs, in French and German, which have been devoted to it[1] are concerned principally with general architecture on the one part, and with epigraphy on the other. It is not intended in this article to deal further with these particular topics—indeed, the author is not qualified to do so—but to describe the citadel as a fortress and a monument of Islamic military art.

The reasons for the comparative obscurity in which so considerable a structure is covered are of two kinds: firstly, it must be admitted that until fairly recently, while much was known about the castles of the Crusaders, those of their opponents were very little studied, and even now not very much has been written on the subject. In the second place, the low and inconspicuous site of the fortress, and the way in which a misguided piece of Turkish town-planning has built houses and shops directly against the walls, on the site of the filled-in ditch (pl. XIX, *a*), render it impossible to obtain a good view of the outside, and surprisingly easy to overlook the existence of the citadel altogether;[2] while its employment as a barracks and prison renders its study difficult. It must, however, be emphasized that, breached and damaged,[3] blocked-in with buildings, turned to base uses though it may be, the Citadel of Damascus is a medieval fortress of the first magnitude, of great interest, and on the whole very well preserved; such a structure as calls for description, not merely on the rather limited scale of this article, but in greater detail—perhaps in the manner in which M. Deschamps has described Le Krak des Chevaliers or Professor Creswell the Citadel of Cairo.

---

[1] Sauvaget, 'La Citadelle de Damas', *Syria*, xi, 59–90 and 216–41; and M. Sobernheim, 'Die Inschriften der Zitadelle von Damaskus', *Der Islam*, xii (Berlin, 1921), 1–28; Wiet, 'Notes d'épigraphie syro-musulmane', *Syria*, vii, 48 et seq.; Wulzinger and Watzinger, *Damaskus* (Berlin and Leipzig, 1924), i, 54–6, and ii, 166–82, plans 14–17 and 60.

[2] A senior officer of my acquaintance, a man of culture and intelligence, admitted to me, after we had been stationed in the vicinity for several months, that he had no notion that there was such a thing as a citadel at Damascus!

[3] The greater part of this damage belongs to a fairly recent period. Dilapidations must have occurred, especially under Turkish rule, but down to the eighteenth century the citadel was treated as a serious fortress; D'Arvieux in 1660 and Maundrell in 1698 were both put in fear of their lives when examining the defences. In 1771 (*v. infra*, p. 83) the citadel stood siege, and the damage done by the bombardment was repaired at once. Under these circumstances it is quite easy to believe Porter, who mentions the exterior as being 'in good repair' in 1850. Probably the damage to the western end of the enclosure followed soon after this, but as to the rest of the structure, it may well have survived more or less intact up to the beginning of this century; certainly von Oppenheim's photograph, published in 1899, shows the south-eastern corner in an almost perfect state of preservation. It is between the date of this photograph and 1914, when Herzfeld's pictures were taken, that most of the mischief seems to have been done. The Herzfeld photographs reveal a substantial measure of damage; fortunately there seems to have been no change for the worse between this time and my visits in 1942 and 1943. Since that time the fabric has suffered fresh damage from shell-fire during the unhappy events of the Syrian revolution; I am glad to be able to state that this, according to Mr. C. N. Johns, does not appear to be serious.

Present Condition

The citadel occupies an area about 500 ft. north and south by 750 ft. east and west (150 m. × 230 m.) at the north-west corner of the old city, overlooking on its north the Barada river, and, more immediately, the Banias canal, a narrow water-supply stream, but fast-flowing and of considerable volume, which rejoins the parent stream beyond the north-eastern corner of the citadel.

The form of the fortress is a very rough rectangle (pl. XXI); three of the sides are approximately straight, but the fourth, the north side, bends markedly inwards in its western half, following the curve of the Banias, so that the north-western angle is very obtuse, and the west front—the most exposed to attack—is also the shortest.

The ground is fairly level, but there is a steady fall from south to north over the whole area of the citadel and beyond it.

Since an early period there has been a fortress on the site, and traces remain of older walls and towers, but the citadel as we see it to-day is essentially the thirteenth-century Ayyubide castle, a structure of enormous solidity. Even at those few points where its defences have been destroyed the later work forms mere patchings and mendings of the main structure.

On approaching the present western entrance, corresponding to the vanished Bab as-Sirr of medieval times, one finds the way spanned by a wall of dubious character, apparently refaced, if not rebuilt, since the middle ages. There is little of this front of the defences to be seen, as on this side the shops in the bazaar are built actually against the outside of the wall, and barrack-buildings against the inside, so that the whole is obscured. It appears, however, that one is passing over the site of the vanished tower of the citadel, tower 13.[1]

Traversing the entrance, one finds oneself on the parade-ground of the *gendarmerie* barracks which occupies this end of the enclosure. All around are buildings, ancient and modern, turned to the use of stores and regimental offices, while at the far end a high barbed-wire fence surrounds the exercise yard of the prison. Around all stand twelve enormous towers. These are by no means all in equally good condition; tower 1, for instance, has lost its entire outer portion, and the five towers of the northern face have all been much patched and rebuilt—tower 11, the smallest in the citadel, is entirely secondary work—and are mostly in poor case. The big square tower 8, however, at the north-east corner, is evidently very much in the state in which its last reconstruction left it, and the towers of the east and south sides are largely complete, despite the loss of much of the parapets and of the upper story of tower 5. In particular, the two huge and lofty towers 3 and 4 dominate the whole scene, complete *de fond en comble* (pl. XVII, *b* and *c*).

The curtains correspond in condition to the towers; on the north they are grievously patched and breached, on the east and south largely intact, except for curtain 4–5 which has been greatly reduced in height. While the domestic buildings are for the most part outside the scope of this article, it is clear that they must have suffered far worse than the defences.

---

[1] *V. infra* for a discussion of this tower, p. 91.

The Site and Outer Defences

The site of the fortress compares unfavourably in most respects with those of other castles and citadels of the Ayyubide domains. Cairo and Gindi have their rocky eminences, Sheizar its narrow ridge, Homs and Aleppo the stratified *tells* of ancient cities. In the absence of such natural advantages, the citadels of Ba'albek and Bosra were built on and against huge ruins of antiquity, in the one case a temple, in the other a theatre. At Damascus the ground is generally level, and the only large classical building—the temple of Jupiter Damascenianus (the Omayyad Mosque)—was in occupation as a religious building, as it is to-day; in any case, it was hardly robust enough for a fortress, and stood in a disadvantageous position in the middle of the city.

Under these circumstances the builders of the original citadel took up a position on the waterside, at a point where the Barada is doubled by the Banias, a canal carried off from the main stream, to rejoin it at the mill which stands just to the north-east of the citadel (18, pl. XXI). Thus the north front was defended by a double wet obstacle, which could also be used to supply a wet moat upon the other sides. The disadvantage of this arrangement was that a besieger could divert the Banias, and even possibly the Barada itself, at the weirs and sluices of the irrigation system in the gorge above the city. The defenders, however, could prevent the water escaping from their immediate defences by closing the sluices of the mill, a fortified building of the fifteenth century, forming part of the city wall. Whether there was a similar arrangement at an earlier date we cannot say, but it is reasonable to imagine something of the kind.

The Banias is at present hemmed into a narrow channel, only a few feet wide, by a terrace running along the foot of the walls and giving access to the gate-tower 10 and the outer faces of the other towers. I doubt if this arrangement can be original; it was much too convenient for an enemy. Moreover, the western part of the terrace partly blocks some of the loops in the walls and towers against which it is built.[1]

However, even if we were to remove this terrace, the moat would still be distinctly narrow at one point—in front of tower 10. Here it may well have been narrowed on the far side, and there is evidence to suggest as much: the upstream portion of the far bank, or counterscarp, of the Banias is revetted with a stone wall of conspicuously good workmanship down to a point about 45 ft. (14 m.) upstream of the tower, about the distance at which one would expect any deviation of the stream in order to avoid the tower to begin; but instead of altering course, the revetting-wall continues in the same alinement, but in a much inferior material. The good masonry does not reappear on the counterscarp, and the scarp (i.e. the wall supporting the terrace) is wholly built in inferior material. It therefore seems likely that the good masonry represents the original limit of the Banias, which has elsewhere been narrowed to its present width.

Beyond the Banias comes a narrow spit of land, varying from about 170 ft. to 50 ft. (about 60 m. to 18 m.) in width, and then the main stream of the Barada. At present there is a bazaar on this spit, but originally it must have been kept clear. There are no buildings of any antiquity on it, or indeed within a considerable distance of the outer perimeter of the citadel. (Inside the city they naturally come rather closer.)[2]

---

[1] Similar terraces in English castles are of late date, for they weaken the defence, and belong to an unwarlike age.

[2] See plan, planche IV, Sauvaget, *Mon. hist. de Damas*.

Upon the other sides, the citadel was defended by a ditch, whose width is given as 10 toises or 60 ft., and its depth variously as 18 and 15 ft.[1] This was kept dry, the water being let into it during a siege.[2] These estimated dimensions suggest a moat of adequate, but not enormous size; the breadth accords well with the surviving arrangements of the town wall at the north-east corner; it would appear to be measured from the fronts of the towers, whose projection is of the order of 25 or 30 ft. (7 to 9 m.).

General Description: The Ancient Citadel

The original citadel, occupying the same site and surrounded by substantially the same outer defences as its mighty successor, has left certain traces of an important nature—portions of a pair of gate-towers just inside the medieval north gate (14 and 15, pl. XXI), the stump of a large corner tower at the north-east (16), and another tower (17) some distance to the south, connected with it by a length of curtain; Sauvaget also includes some featureless fragments forming part of the ruinous building 20.

These various remains were considered by Wulzinger and Watzinger to be part of a Roman or Byzantine *castrum*; this view was followed by Wiet and at first by Sauvaget himself. As our French authorities point out, the older citadel was strengthened under Saladin to our knowledge, and quite as certainly by earlier princes also; Sauvaget was at first puzzled by the preservation of part of the original structure (as he conceived it) when all the additions had been swept away, but later he revised his whole position in the following terms:

> L'origine antique de la citadelle, admise sur la foi de K. Wulzinger et C. Watzinger, nous paraît aujourd'hui discutable. Il est probable que la fondation de la forteresse ne remonte qu'au X^{e} siècle; elle aurait alors été construite en brique crue [mud-brick?]; les parties les plus anciennes de l'édifice actuel seraient dues à une reconstruction du XI^{e} siècle.[3]

The towers 16 and 17 forming part of the prison, I had little opportunity of examining them, and it is therefore with some hesitation that I join issue here. The tower 16 is robustly built and well arranged internally; it is a competent piece of military architecture, and thus, while it may possibly form part of the same work as the less-developed tower 17, the same can hardly be true in the case of the miserable structures at the north gate, which hardly deserve the name of architecture. They seem, indeed, to be merely revetments, whose filling, no doubt the *brique crue* already mentioned, has long been removed.

It would therefore appear that the surviving fragments of the older citadel represent two, if not three, periods of work; and the discovery of an inscription of Saladin,[4] commemorating the repair of a tower—which from the curvature of the stone was evidently round—suggests that we must add two further periods of construction; numerous patchings and repairs to the ancient structure must have taken place.

---

[1] D'Arvieux, *Mémoires*, ii, 449; Kremer, *Topographie von Damaskus*, ii, 22.

[2] It should be admitted that statements of this kind require careful scrutiny, and in the case of European castles usually prove to be untrue; but here there is no reason whatever to disbelieve the assertion.

[3] *Mon. hist. de Damas*, vi.

[4] Appendix A, No. 1.

The New Citadel: The Style of Al-Adil

It is clear, however, that by the beginning of the thirteenth century, when the great builder-sultan, al-Malik al-Adil Sayf ad Dunya wa'd Din abu Bakr ibn Ayyub, the brother of Saladin and the 'Saphadin' of Crusader narrative, took in hand the reconstruction of the defences, their obsolete character, despite all rebuildings, was such as to make him decide on building an entirely new fortress on the same site.

This was by no means al-Adil's only fortress. His position as sultan of the reunited empire of his mighty brother had been gained by extinguishing the independence of his nephews, between whom that empire had been partitioned; and it may be that he felt uncertain of these forced vassals. In any case both he and his nephews had good reason to build defences against the Christian arms. The Frankish states had made a good recovery since the disasters of 1187, and the new century saw them pushing ahead with a formidable programme of fortification. Worse still, the Third Crusade had demonstrated the power of the West, and outbursts of Crusading ardour were to imperil the position of the Moslems for many years to come.

Under these circumstances, the sultan's prudence in equipping his empire with a chain of strong fortresses is commendable; the work seems to have been shared between al-Adil himself, his nephews, and his sons, but even if the younger members of the house of Ayyub worked on their own schemes, without the sultan's orders, they seem in general to have received his help, as the features of all these fortresses are very closely similar. This style of al-Adil is so distinctive and so well defined that a description of it will not be out of place here.

In the first place, we find in the fortresses of the series in question all the features of developed fortification in this period and part of the world: good flanking; numerous arrow-slits; fighting galleries or loop-arcades along the curtains; double parapets; machicolation by box brattices;[1] oblique and serpentine entrances; etc. Of the more distinctive features, we may quote Professor Creswell:

> In every case rusticated masonry is employed, in every case the towers are square or rectangular, and, finally, the construction of the arrow-slits which we have observed in the square towers is . . . a tapering vault like half a cone laid on its side, built of well cut stones.[2]

The rusticated masonry mentioned here has the facing-stones worked with a narrow dressed border, the remainder of the face projecting, either roughly worked or, as is more usual in al-Adil's work, left completely without dressing. It should be mentioned here that, in Syria at any rate, none of the three characteristics, *by itself*, is peculiar to al-Adil's work, though the three together, particularly where the rusticated masonry is very large and rough-faced, raise a pretty strong presumption. These, however, are not the only characteristics: the towers are enormous, and of very robust construction, their stages being covered in pointed barrel-vaults, intersecting one another; these are normally the same height, so that the intersections form plain groined cross-vaults. There is a great diversity between different plans, but in every case the span of the vault is kept very restricted, and the whole construction is of immense solidity. Where the ends of the barrel-vaults abut against an exterior wall, there is an arrow-slit, or more rarely two. This has its disadvantages, for, as the plan of the tower repeats itself on successive stories, the arrow-slits are superimposed one above the other on the face of the tower. This, as all authorities agree, is a defect; it leaves 'dead ground' between the arcs of fire of the loops, and weakens the structure of the tower. I should consider these objections over-valued, at any rate at Damascus, where the structure of the towers is too solid for any weakness to make itself felt. In any case, this is a small drawback in so bold a style; the habitual employment of such huge towers is unknown, to the best of my knowledge, anywhere else either in Europe or in the Near East.

---

[1] The word *brattice* is employed in this article to describe the small projecting machicolations for which the French term is *bretèche*.

[2] 'Citadel of Cairo', *Bulletin de l'Institut français d'archéologie orientale*, xxxiii, 118.

The thirteen great towers of the citadel were disposed in the following manner round the approximately rectangular *enceinte*: on each of the corners was a big tower, those on the northern angles being approximately square, those on the southern angles taking the form of immense clasping-buttresses or of a letter L built around the angle; on the long north face there was a great gate-tower capping the obtuse angle in the centre of the front, with a tower on each side of it, only one of which (tower 9) remains in its original form; on the east two towers were set very close together to defend a narrow space between them, upon which a gate in the flank of the more northerly opened; on the south were three big towers in a row, with another on the west, now vanished. All the towers project from the curtain towards the field, having little or no internal projection; the two gate-towers, however, are continued internally by single-story gate-halls. The five surviving towers other than gate-towers and angle-towers are all of a fairly uniform type; no doubt the two vanished towers (11 and 13) were similar. Their shape is curious, a rectangle twice as wide as it is deep, so that upon a plan it gives the appearance of slight projection and poor flanking, an appearance which would be justified if it were not for the enormous scale of the towers. So wide are they in fact that the perimeter of the citadel, even in its present state, is made up, as to more than half, of the faces of towers; i.e. there is more tower than wall in its circuit.

Al-Adil's architects, being deprived of any outstanding natural defence for their citadel, were obliged to rely on their own proper skill and the massive solidity of their constructions. It is this which gives Damascus its particular glory; on every side nature left it weak, and on every side the hand of man has made it fearfully strong. The huge towers are set close; every side bristles with arrow-slits and box-brattices; walls and towers are of immense solidity, and the towers of great height, enormously overtopping the curtains, which are not abnormally lofty. The defences of the curtains are peculiar; they are pierced at ground-level by a continuous series of arrow-slits, opening, not into the lower stages of the domestic buildings ranged along the walls, but into a narrow vaulted corridor between the curtains and towers on one side, and the domestic buildings on the other.

A final feature which calls for comment is the manner in which the new defences of the citadel were established a little in advance of the old; it is evident that the careful sultan enclosed the older fortress in the great works that were to supersede it before he allowed it to be dismantled. Thus he avoided the risk of being caught with half-built defences, which would have had to be run if the old work had been demolished to make way for the new. This trick of enclosing old defences in new is found—though on a much smaller scale—elsewhere in the work of al-Adil's reign: at Cairo, where five of Saladin's round towers were enlarged by encasing them in a thick shell of new work; at Ajlun, where an uncapped angle in the existing castle was flanked without pulling the actual corner down; and most probably at Subeibeh, where two square Crusader towers have been greatly increased in size in much the same manner as Saladin's towers at Cairo.[1]

This method of building had its disadvantages: the new fortifications had to have their foundations laid in the original ditch, and the domestic buildings had either to incorporate irrelevant fragments of the old citadel—as at the north-east of the enclosure—or to be added after the old walls had been pulled down—as seems to have happened on the south, where in at least one place the defences and the inner buildings join rather untidily. On the other hand, the builders, starting with a complete defensible line already standing, were able to build the new defences piecemeal; that is to say, instead of starting the whole circuit from its foundations and carrying it up to a defensible height, they were able, if they desired, to finish each sector of the defences before beginning the next. There is evidence that this is what happened; al-Adil's inscriptions cover the considerable period of nine years (1208–17), and it is clear that his nephews undertook various parts of the work.[2] Moreover, the evidence of the structure suggests the same; although the towers have a great deal in common, and must have been built to a fixed specification, they show some significant differences in detail. Further, the existence of one or two straight joins in the circuit, the curious absence of alinement between towers and curtains (even on the 'straight' faces each tower covers a slight angle in the curtain) and the very clumsy join between tower 8 and the curtain to the west of it all tell the same story.[3]

We need not be surprised at this piecemeal construction, for most comparable fortresses reveal their patchwork history in a series of contrasting styles, whereas al-Adil was able to carry through this vast citadel as the fulfilment of a single connected plan.

The South-west Angle: The Palace and Tower 1

The south-western corner of the enclosure is occupied by a conspicuous and well-preserved building of two stories (19, pl. XXI), comprising a number of small cross-vaulted rooms; Sauvaget considers, on the basis of internal and documentary evidence alike, that these formed the private quarters of the Ayyubide sultans, the more public apartments of the palace which occupied this corner of the citadel having been destroyed. The block stands to a considerable height (50 ft. or 15·30 m.—Sauvaget), and conspicuously overtops the curtains, ending in a flat roof, reached by a stair from its upper story. In view of its exposed position, I find it difficult to accept Sauvaget's suggestion that there was ever a third floor; the whole of this would have been exposed to the missiles of an enemy; besides which, there is absolutely no trace of any such story, except the afore-mentioned stair, which would in any case be needed to give access to the flat roof.

---

[1] Creswell, 'Citadel of Cairo', *Bulletin de l'Institut français d'archéologie orientale*, xxiii, 115–22; Johns, 'Mediaeval 'Ajlun—the Castle', *Quarterly, Department of Antiquities, Palestine*, i, 27; Deschamps, *La Défense du Royaume de Jérusalem*, pp. 171–2.

[2] The truth of this is attested by the inscription on tower 3 (Appendix A, No. 3) which records that the building was ordered by the sultan and carried out by al-Mansur Muhammad, prince of Hama. Sauvaget also mentions strongly Aleppine features in parts of the citadel, suggesting that az-Zahir Gazi of Aleppo also bore a hand in the work (*Syria*, xii, 222–6).

[3] There is a parallel in the North Welsh castle of Caernarvon, which was also built around an obsolete fortification. This was erected in the same way in two sections, their meeting-point being marked by a conspicuous and untidy knuckle in the curtain.

The ground floor of the palace is now used for stores and regimental offices, the upper story for barrack-rooms.

If one mounts to the level of the rampart-walk by way of the roofs of the modern buildings along the west curtain, one finds oneself in a wide corridor passing around the end of the palace, and spanned by an added vault springing from the palace wall on the one side and a strong and high wall of masonry on the other. Above this vault, whose only function seems to have been the enlargement of the flat roof of the palace, there is no superstructure. It is not at once obvious what has happened here, but in fact the outer support of the vault is no other than the truncated rear wall of the shattered tower 1. The outer part of this tower is completely demolished and little can be said about it, except that it capped the angle without having any internal projection, and thus formed a letter L in plan, closely similar to tower 5.

The South Face: Defences of the Curtain

On rounding the corner, one finds oneself looking along the southern face of the battlements. Immediately in front is an enormous tower of rusticated masonry (tower 2) with two others, even more imposing, beyond (3 and 4, pl. XVII, *b* and *c*). On the right hand is a debased wall, part of which is formed by the parapet, with its embrasures walled up; the other part, towards tower 1, has been rebuilt. The corridor in which one stands is of remarkable breadth, and the top of the curtain is visible as a sort of kerb on one side, as if to emphasize that the whole of this very wide wall-walk is not supported by the curtain itself; that the rear part, in fact, is carried on some kind of undercroft. A little farther along there are holes in the ground which serve to light this substructure.

Even so, the curtain itself is notably solid; most of it has the enormous thickness of 16 ft. 1 in. (4·90 m.), dropping sharply near tower 1 to 12 ft. (3·65 m.). The parapet was of the form common throughout the fortress, thick and well built (2 ft. 9 in./85 cm.), with plain square merlons pierced by square-headed recesses for arrow-slits. The slits themselves are perfectly plain, like all those in the citadel—without even a plunge—and rather short (about 4 ft./1·20 m.). The embrasures between the merlons are comparatively narrow (2 ft. 3 in./70 cm.).

If now one descends to the courtyard and passes through the narrow passage under the palace (A, fig. 1, *a*) which leads to the door of tower 2, one finds oneself in the undercroft beneath the wall-walk, a narrow, lofty passage (see section, pl. XX, *h*) leading across the back of the tower, bounded by the line of walls on the one hand and the palace on the other, the two standing back to back; its height is the full height of the curtain, and its roof carries the rear of the wall-walk. Where it is complete, it is vaulted in a continuous succession of cross-vaults; into it open the basement stories of the towers, and along the curtains it is lined with a series of deep-vaulted discharging-chambers for archers, out of which open arrow-slits set in recesses covered in the normal tapered vaults of al-Adil's work. There are four or five of these in each length of curtain, for the vaulted gallery evidently ran the whole way round the defences without interruption. Traces of it are to be found on every face of the citadel; even in the Mamluk curtains 10–11 and 11–12 a similar arrangement was employed.

Now this feature of the defence is brilliantly conceived; it is a perfected system derived from the two common methods used in the East for supplementing the wall-head defences of a curtain: in the one a range of arrow-slits opens at ground-level out of the basement stage of the buildings along the curtain; in the other a 'fighting gallery' is constructed in the thickness of the curtain some little way up, defended by arrow-slits in the outer wall. The method used at Damascus excels the first in avoiding interference with the domestic buildings and their functions, the second in weakening the curtain less and providing point-blank grazing fire at an enemy attempting to cross the ditch; and both methods in the easy and swift movement which it permits from one point of the defences to another, both along the gallery itself and along the generous width of the wall-walk.

The gallery has its own inscriptions: one (No. 17, Sobernheim's No. 12) behind tower 9 and another (No. 18, a fragment discovered by Sauvaget) behind the curtain 7–8; both refer to work done in the very last years of the reign of Sultan Qalawun[1] and, to all appearances, to the same work: the construction or reconstruction (*'imara*) of certain vaults forming a passage from Bab an-Nasr to Bab al-Faraj—two gates of the town near the south-west and north-east corners of the citadel—along the walls and towers. Despite a contrary interpretation by Sobernheim, Sauvaget has proved beyond reasonable doubt that these inscriptions refer to the gallery,[2] his conclusion that they can only commemorate repairs, and not an original construction, seems to me equally unassailable.

The curtain 1–2 has four discharging-chambers and four arrow-slits; at the end nearest tower 1 is a staircase, which formerly will have given access to the wall-walk; now, however, it only reaches to a small opening near the top, leading to a latrine. It is the recessing of the curtain to accommodate this stair that produces the conspicuous drop in its thickness which has been noticed above.

Tower 2 and the Standard Tower-plan

Tower 2 is an example of the type of tower used in the citadel to flank a straight face. Towers 3 and 4, 6 and 9, are of this standard form, as in all probability were the predecessor of tower 11 and the vanished tower 13. All differ in detail, but all conform to a single specification. They are of three stories, with a two-story parapet above; they are approximately twice as long as they are deep,[3] and each of the three stories is vaulted with a main pointed barrel-vault running lengthways, crossed by three short vaults—almost always the same height as the main vault. At the extremities of the main vault and the outer ends of the subsidiary vaults are arrow-slits, set under the usual tapering vaults, and at the inner ends of the subsidiary vaults are generally recesses, and the openings of doorways.[1] There is a latrine on each floor, usually situated in the left-hand inner angle (looking to the field) of the tower. Here it was able to drain into the moat, while itself carefully tucked away where it would not weaken the structure against the assaults of an enemy. There is a basement entrance, generally in the centre bay, and at least one entrance from the wall-walk, whose position varies from tower to tower. The staircase is tucked away as scrupulously as the latrines. Entered by a doorway in the left-hand bay of the basement, it runs upwards, from left to right, straight across the rear of the tower, giving access to each floor in turn, and finally to the roof. By this time, of course, it has turned the angle, run out along the flank of the tower, and passed out over the line of the curtain, so that it forms part of an exposed wall; but by this point it has reached a very great height above the ground, so that the defence is in no way impaired. (These arrangements are shown in figs. I, 3 and pl. XX.)

---

[1] Sobernheim's inscription, 1290; Sauvaget's, 1288 or later. Qalawun died in 1290.

[2] See Sauvaget, 'La Citadelle', *Syria*, xi, 229–31. Sobernheim was led to imagine a gallery of some kind *outside* the citadel, through understanding the name 'Bab an-Nasr' to refer to the east gate of the citadel.

[3] Tower 2 is 88 ft. 3 in./26·90 m. long, by 42 ft. 2 in./12·85 m. deep.

The double parapet, several times mentioned, takes the form of a continuation upwards of the walls of the tower above the roof to form an additional stage of the defences, which was provided with loopholes and from which the brattices were worked. The top of this fighting-stage formed the wall-walk, with a normal parapet, very similar to those of the curtains (see fig. I and pls. XVII, *a*, *b* and XX). In these towers the double parapet only extended round the flanks and face of the tower, the back being left open, with only a kerbstone across it.

The basement of tower 2 corresponds to the description above. It is entered by a door immediately opposite the passage A (fig. I, *a*) in the crown of whose arch, immediately outside the door-jambs, is a small square 'murder hole' for the descent of missiles—a clear indication that the tower was meant to be in some degree defensible by itself (B, fig. I, *a*). A short passage brings one to the basement chamber of the tower, a long, narrow room now used as a store; its loopholes have been broken out to form windows and a doorway. They are situated in the usual places—one in each bay and one at each end of the main vault. In the left-hand inner corner of the room is a low doorway, whence a short bent passage leads, up a few steps, to the latrine C. On each side of the entrance is a deep, vaulted recess; that on the left hand must have given access to the stair, now walled up (D); this is visible at first-floor level, where a crude entrance—a mere breach—has been made to reach the interior of the tower from the wall-walk. This first-floor room is now a magazine, and is not accessible, but at the foot of the modern steps leading down from the wall-walk (which is at a higher level than the first floor) one is able to look down the blocked stair on the left. On the right the staircase ends abruptly; it seems to have been walled up. The stair is vaulted in a series of horizontal pointed barrel-vaults rising in inverted steps; this is one of the alternative methods used in the citadel for vaulting stairs, which perhaps reflect a difference in the officials superintending the work. Other vaulting was evidently governed by a fairly strict specification, but that of the stairs varies from tower to tower.

---

[1] This plan is employed in a Mamluk tower, probably built by Bybars, on the east side of the outer line of defence at Le Krak des Chevaliers. It is evidently a copy of the towers of Damascus, on a reduced scale.

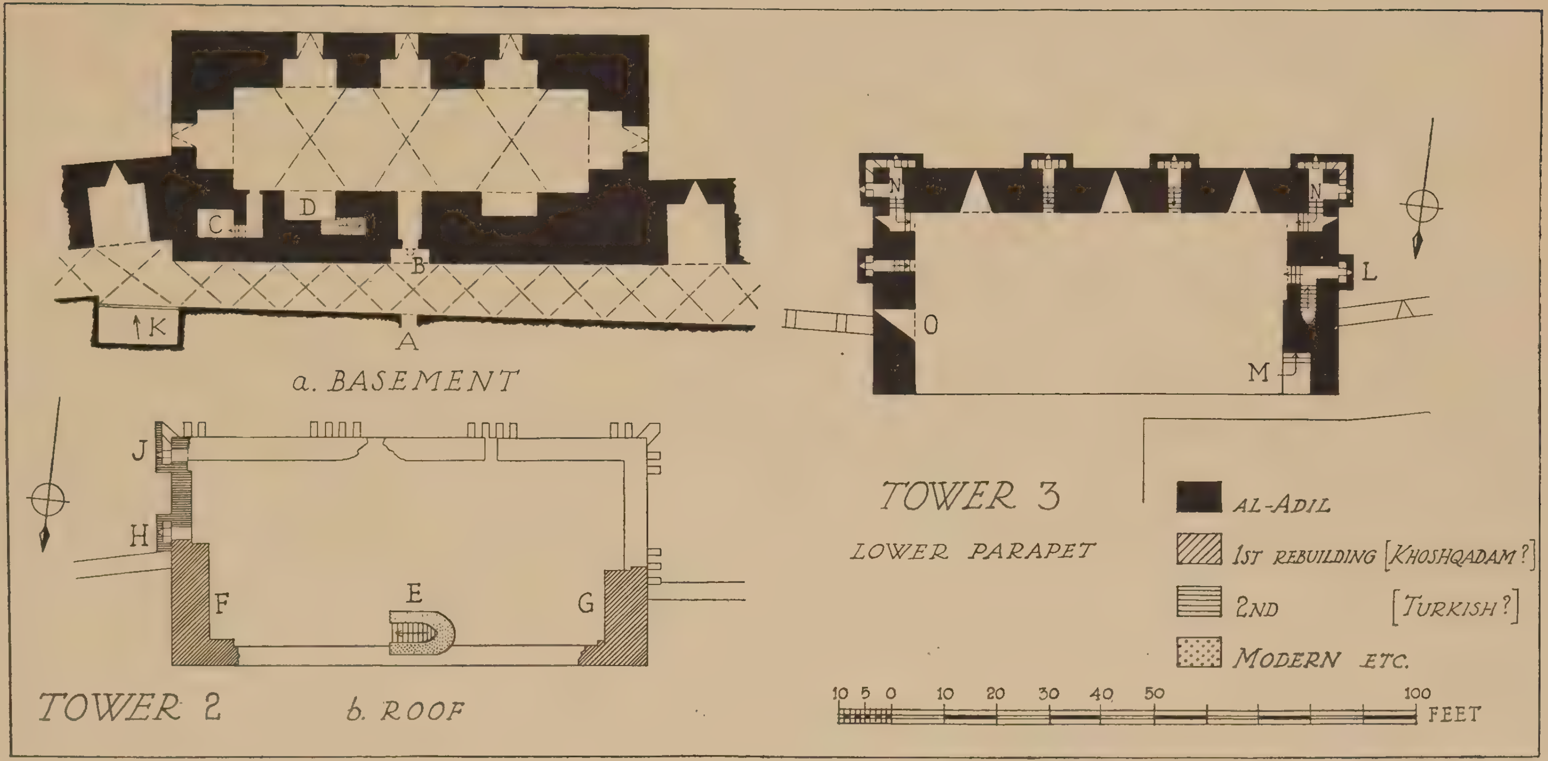

a. BASEMENT
A
B
C
D
↑K
J
H
E
F
G
TOWER 2
b. ROOF
N
N
L
O
M
TOWER 3
LOWER PARAPET
AL-ADIL
1ST REBUILDING [KHOSHQADAM?]
2ND [TURKISH?]
MODERN ETC.
10 5 0 10 20 30 40 50 100
FEET

FIG. 1.

On the level of the second floor, which is now a barrack-room, there are two external doors, both high above the rampart-walk; that on the east, which has a sill carried on corbels, is now inaccessible, and has been walled up. It may well be an insertion, but there can be no such doubt about the door on the west. The long flight of steps leading to it is modern, but the arrangement of the loopholes in the parapet shows that it must have had a predecessor; one arrow-slit being so placed that it could only be used from the steps. The door itself has a bar-hole—which is in keeping with the defensible character of the tower—and gives access to a passage in the thickness of the rear wall, from which, on the right, a door opens into the second-floor room. The floor of the latter is a good metre below that of the passage, which may have been so arranged in order to be clear of the main stair passing underneath. The passage continues in a straight stair, set under the stepped vaulting already described, and emerges on the roof, its opening being covered by a species of brick booby-hutch, which cannot be of any antiquity (E, fig. 1, *b*).

Unfortunately, this first example of the fighting-stage of al-Adil's towers is not well preserved; indeed, nothing remains of the original defences from the level of the roof up, the double parapet having undergone two separate restorations, and being once more in ruins.[1] The earlier of these restorations has left two lengths of both stages of the parapet (F, G) occupying the inner portion of each flank. In strong contrast to the body of the tower, which is in the customary boldly rusticated masonry—including several reused stones still showing traces of classical ornament—this parapet is in good ashlar, with a black-and-white pattern still visible. It appears that a thin wall was built across the gorge of the tower, but this has vanished; both walls end off sharply in front at the openings of the flank brattices. On the east is a fragment of the second restoration; for the rest of the circuit only its lowest courses remain. It is a miserable affair, much thinner than the first work, and may never have supported an upper parapet. The two surviving brattices (H and J) are entered by miserable crawl-holes, through which a man must go on all-fours, instead of the adequate openings usual in defences of this kind. Both brattices have had their upper parts rebuilt; J has lost its face, and there are traces of a wretched little building of some kind in the angle behind it. The corbels of the other brattices remain; their arrangement and size are perfectly normal, but some may be secondary, for much of the upper part of the face of the tower has been rebuilt, or at any rate refaced. There are two inscriptions; the first (No. 27) records repairs by Khoshqadam in A.H. 866 (A.D. 1462); the second (No. 28) is a late Mamluk fragment. I find it impossible to attribute the rebuildings of the parapet on the strength of the existing evidence; the first rebuilding may be Khoshqadam's work, but it seems difficult to ascribe the second to the Mamluk period at all; its poverty is more consistent with Turkish construction.

Tower 3

The parapet between towers 2 and 3 has been truncated; its merlons are gone, but the tails of the loops remain. In the gallery there are five recesses for arrow-slits;

---

[1] This ruined state is relatively modern; the tower is shown fairly well preserved in the photograph by von Oppenheim in *Vom Mittelmeer zum persischen Golf* (Berlin, 1899), i, 64.

under the first passes an arm of the Banias, which entered under the western curtain (K, fig. 1, *a*); immediately beyond the last recess is a narrow postern. Cutting across the head of this recess passes a stair rising to the wall-walk—a clumsy feature.

Tower 3 is a majestic structure, far more imposing in its present—virtually perfect—condition than its neighbour, tower 2; it was always a little higher.[1] Sauvaget made this tower the subject of a particular study; I, however, found it singularly inaccessible, owing to the suspicious habits of the N.C.O.s of *gendarmerie* who had their quarters there and kept the door locked. I was able to visit it once, and found it the best preserved of all the towers, even better than tower 4, which I was able to study in detail.

The basement doorway is of a type very different to that in tower 2; it has a much larger recess, and no 'murder hole'.[2] The rear wall of the tower is thickened to form a ledge at first-floor level,[3] joining the rampart-walks on each side of the tower—which are, of course, a few feet higher—there being no building behind this tower, and hence no rear wall for the main gallery, which is left open. A doorway opens off the ledge, giving access to a little cross-vaulted landing on the main stair; unlike its companion in tower 2, this door is unquestionably original. From the landing another door opens into the first-floor room.[4] The stair has not been blocked or damaged, as have those of both its neighbours, and it can be examined as a whole. It is amazingly steep to western ideas; this I have observed to be a normal feature in the Moslem military architecture of Syria; it will have called for greater sureness of foot than the heavy-armoured European could be asked to show. The vault covering the stair is of a different kind to that already mentioned: a continuous inclined pointed barrel-vault. At the angle where the stair turns there are two openings: a doorway on the west flank of the tower—clearly an insertion and now partly walled-up—and another secondary opening in the rear of the tower; both are now quite inaccessible from outside. There is no door in the east flank.

At the head of the stair one emerges on the roof of the tower, a small courtyard space, bounded on three sides by thick walls—the upward continuation of the face and flanks of the tower—and on the fourth (the rear) by a sheer drop into the ward (fig. 1). At the top of the main stair, immediately before the couple of steps to the roof, is a brattice (L) with two openings, and on the left of the staircase door, at M, is a short flight of steps leading up to the battlements proper. Around the roof-space are the openings of big plain arrow-slits, set in square-headed recesses; alternating with these are the smaller openings leading to the brattices. These, curiously, are down a few steps from the roof (3 ft. 5 in./1·05 m. below), an arrangement which seems to have few advantages; manhandling heavy stones on these steep steps must have been a matter of serious difficulty. The arrangement of the angle brattices is interesting; they are reached by a stair with a bend, at which is a short arrow-slit, directed obliquely to the front. Beyond, at the foot of the stair, come the openings leading to the two arms of the brattice itself; between them is a stout square pier (N) carrying the angle of the parapet. The brattices are of the usual Syrian form; made of stone slabs of no great thickness, covered by a sloping penthouse roof, and lit by a loophole (two in the corner brattices) far too short for archery; such a slit can only have been used for lighting and observation.

---

[1] At roof-level it is almost exactly the same in length and depth: 88 ft. 2 in./26·90 m. by 42 ft. 1 in./12·87 m.

[2] See diagram, Sauvaget, 'La Citadelle', *Syria*, 1930, p. 72.

[3] *Ibid.*, p. 66, for diagram.

[4] *Ibid.*, p. 72, for diagram.

The big arrow-slit in the east flank of the lower parapet (O) is directed obliquely to the front, like those in the entrance to the brattices; the same is true of the arrow-slits in the merlons of the upper parapet. Sauvaget shows a similar disposition in those lower down in the flanks of the tower, opening out of the chambers; I cannot confirm this from memory, but it is certainly *not* true of the other towers.

On the second floor the central arrow-slit in the face of the tower has been replaced by a rectangular window, surmounted by an ornament motif—a conch taken from a classical building.

The Curtain 3–4

Behind tower 3 the domestic buildings begin again, in the form of the long, one-story structure 20, now ruined and blocked up, except at its western end, where there are some fragments of masonry, allegedly part of the old citadel.

Between this and the curtain runs the gallery. The five recesses opening out of this are of an abnormal form, covered in a species of corbel-arch, the corbels being recessed to allow the archer more room—a form common enough both in the East and in Europe. These may be due to a rebuilding; an inscription of Bybars (No. 15), of which Sauvaget found traces, may relate to this, but it is uncertain whether this is on curtain 2–3 or 3–4.[1]

Tower 4

This great tower dominates the whole citadel; complete to its parapet, it is 4 or 5 ft. higher even than its neighbour, tower 3, and was always the highest tower on the circuit of walls, if one may judge by those that remain.[2] In plan it is slightly smaller than towers 2 and 3,[3] but it appears to have been treated with special regard; it possesses additional defences, additional decorative features, which its neighbours lack.

The basement story is entered from the gallery by a door with a 'murder hole' exactly like that of tower 2 (P, pl. XX, *a*); the room, now a wood-store, closely resembles its counterpart in that tower. There is the same disposition of vaults and arrow-slits, save that in this case the subsidiary vaults are lower than the main vault, and so do not form cross-vaults; the bays are divided by wide plain ribs. There is the same latrine in the corner, the same arrangement of five great arrow-slits (6 ft. 3 in./1·90 m. in length) set under tapered vaults. The rear wall, however, is differently constructed to that of tower 2; there is an arrow-slit in the right-hand recess, at Q; its utility seems doubtful, for not only is it turned inwards towards the fortress itself, but it opens on the enclosed gallery, and thus has no field of fire; while for the same reason it is useless for lighting purposes. It would appear that there has been a vital change in the plan, and it is perhaps not without significance that this tower bears the earliest of al-Adil's inscriptions (No. 2, A.H. 605/A.D. 1208).

---

[1] Sauvaget, 'La Citadelle', *Syria*, xi, places this on 2–3 according to the text (p. 228) and the plate (pl. XXXVIII) and on 3–4 according to the plan (pl. XXXIX). I have not seen the inscription myself.

[2] The photograph in von Oppenheim, *Vom Mittelmeer zum persischen Golf* (Berlin, 1899), i, 64, shows towers 2–7 standing to their full height; tower 4 is clearly the tallest of these.

[3] 86 ft. 6 in./26·37 m. wide by 42 ft. 4 in./12·90 m. deep.

In the corresponding position on the other side of the entrance is a walled-up door (R); there is no recess in this bay. This door evidently led into the stair; externally there is a lighting-slit well up the wall.

The first floor is entered by a modern opening slapped through the end of the recess in the centre bay (S, pl. XX, *b*); the top of the 'murder hole' must have been in the floor here. The room on this floor, like that above, is a barrack-room, as it must have been for centuries; and most satisfactory barrack-rooms these great chambers make, protected against the summer heat by the immense thickness of their walls. The vaulting is more orthodox than that on the floor below, and forms the customary three bays of cross-vaults; the central bay is the shortest, and the recess opening out of it is correspondingly smaller than those on either side, whose entrance arch is in two plain orders. The bays are divided by the same wide plain ribs as in the basement. The five big plain arrow-slits are a trifle shorter than those below. In the left-hand bay open the door of the normal latrine and the arched recess T, whose end has been broken through for a window; perhaps it housed a loophole. At V, on the other side of the entrance, is the door of the stair. Entering, one comes into a small landing, lit by a little opening in the rear of the tower; on the left hand a section of the main stair is to be seen, blocked a little distance up; but on the right, instead of the descending stair one might expect, is a short *ascending* stair, which turns sharp to the left and ends in a mass of fairly modern filling. This mystery is resolved by an inspection of the outside of the tower; at W, close beside the modern door, but much higher, is visible a walled-up rectangular opening, evidently a doorway leading on to the roof of the main gallery, but well above its present level, for the roof and even the wall-walk along the curtain 3–4 have been lowered to the level of the modern iron balcony by means of which the first floor is entered. It is from the time of these alterations that the blocking of the door must be dated, but the date of its construction is not so easy to determine; clearly it cannot be original, as it involves the blocking of the main stair.

The second floor is entered from the wall-walk by the door X (pl. XX, *c*) set under a two-stone lintel, and to my eyes evidently secondary; there is no bar-hole. Entering, one finds oneself at the angle of the main stair, whose descending arm has been blocked flush with the ground, so as to form a short level passage. On the right the stair ascends, and here it can at last be clearly seen, with its ceiling in steps of barrel-vault. A short way up is a landing, lit by a long arrow-slit, and opening into the second-floor room, typically cross-vaulted in three bays, but differing in several ways from the type. In the first place, the stair blocks one end of the tower, and instead of the normal recess, there are two doors: one the entrance, the other leading to a small latrine, lit by a substantial loophole. In the opposite corner is another latrine, slightly displaced from the customary position. The reason for this displacement is the existence, in the flank of the neighbouring recess, of the short passage Y; this soon comes to an end, and its purpose is a mystery until one observes, in the end wall near the floor, the top of a doorway. Clearly the passage was once a stair, which has been filled in level with the floor, like the main stair at X. The blocked door is still visible from outside, high above the present truncated curtain 4–5.

On this floor the central arrow-slit has been replaced by the rectangular opening Z, a plain window with rebates for heavy shutters; externally it is set under a massive lintel, surmounted by a flat relieving-arch (see Elevation, pl. XX, *f*).[1]

The vault is penetrated in several places by openings, some at least original, communicating with the roof. Similar openings occur in most of the vaults in the citadel, especially in those of the gallery.

Continuing up the last flight of stairs, one emerges on the roof (pl. XX, *d*) in a three-sided courtyard like that on top of tower 3. It is, however, smaller, and instead of the alternating openings of loopholes and brattices, there are only four doorways opening into a fighting gallery running round the three exposed sides of the tower (pl. XVII, *a*). This gallery, roofed in with a pointed barrel-vault,[2] is cut into two unequal parts by the rising stairway; from it open the defences of this level, which are of a formidable order. There are seven brattices and the same number of arrow-slits—one more of each than in tower 3. The arrow-slits have square-headed recesses, and even at a height from the ground which must have rendered downward shooting the rule, they are still very long—5 ft. 6 in./1·68 m.; less admirably, they have no plunges, though this is a feature virtually unknown in Mohammedan fortification.[3] The rearmost slits on each flank are directed obliquely to the front, which is natural enough in view of the fact that they are actually *inside* the line of the curtain. The brattices are level with the gallery; in this tower there are no troublesome stairs. Further, they are larger and more numerous than those in the other towers: there is an extra brattice A in the centre of the front, with four openings for dropping missiles; this is the only one of its kind in the citadel, and the tower is alone in having three brattices on the face. In other respects, with six openings in the angle brattices and three in the ordinary ones, the tower equals the best in the citadel.[4] It has also two minor peculiarities: the corner corbels of the angle brattices are of three projecting stones instead of two; and there is a slight moulding round the small loopholes in the brattices, forming a trefoil at the head;[5] brattice A, however, lacks a loophole, its front being blocked by a slab bearing an inscription of Qalawun (No. 16).

At B is the entrance to the shorter arm of the fighting gallery, set under a corbel-arch, a curious feature; more curious still, it appears that the block of masonry through which it passes, and which carries the stairway to the battlements, is an addition, not bonded to the main structure of the building.[6]

Ascending this stair, one reaches the upper stage of the parapet, a very normal tower-head (pl. XX, *e*), but with several features which call for comment.

Firstly, the loopholes on the flanks of the tower are directed obliquely to the front, a feature which has been noticed elsewhere, and which at first appears to be a defect; for it is clearly the function of a tower to enfilade the face of the adjoining curtain, but with this arrangement it is virtually impossible to do so. The defect, however, is more apparent than real; in fact these arrow-slits are a very great height above the ground, about 75 ft./23 m.; whereas the curtain 3–4 is only 103 ft./31·50 m. in length, so that the archers on the battlements would be obliged to shoot at an angle of depression of 36°—which is a lot more than it sounds—in order to reach even the farthest extremity of the curtain; these arrow-slits, moreover, are fairly short (4 ft. 6 in./1·37 m.) and have no plunge; it was therefore wisely decided to leave the close enfilade to the lower defences, and use the archers on the battlements to supply an oblique fire across the face of the next tower, which with the assistance of the next again could be made into a very effective cross-fire (e.g. the fire from towers 4 and 2 would cross in front of tower 3).

---

[1] Note: the elevation shows the tower restored (without modern windows, etc.) and omits the three inscriptions.

[2] Part of this vault, near the south-east corner, has collapsed, or been pulled down.

[3] The only examples I know are in the Great Gate of Aleppo and a few at Le Krak des Chevaliers. Plunges are rare in Crusader work also.

[4] Towers 7 and 8 are equipped with brattices on this scale.

[5] A similar feature is to be seen in the largest of the towers at the acropolis of Ba'albek.

[6] It is, however, certain that some sort of stair was part of the original design, and the addition of this one is most likely due to al-Adil.

The parapet wall itself is of normal pattern; it is extremely thick (3 ft. 1 in./95 cm.), which accentuates the relative narrowness of its embrasures. A feature which must here be touched on is the presence—on the front of the tower only—of a series of small square holes passing through the shoulders of the merlons close to their ends and low down, a little above the level of the sills of the embrasures. They pass completely through the parapet, and Sauvaget sees in them a row of joist-holes for a *hourdage en bois*. These openings are to be found elsewhere in the fortress: in the parapet of tower 3—face and flank—in that of the curtain 3–4, in the fragmentary parapet of tower 2; the same feature occurs in the citadels of Ba'albek and Jerusalem; it therefore seems to be common to Ayyubide and Mamluk work.

The holes in question are about 4 in./10 cm. square, and their spacing, on the assumption that they are joist-holes, is singularly irregular, the intervals being alternately a little over 2 ft., and 7 ft. at least[1]—a great distance for such flimsy poles; further, there is no other arrangement to support the wooden gallery which Sauvaget imagines as running across the face of the tower; even a roof, leaning on the tops of the merlons, is out of the question; the merlons are only two courses of masonry—at best 4 ft./1·20 m.—in height, and the front of the gallery would inevitably have been much higher. Nor are the structural difficulties the only ones in the way: Sauvaget admits that there is no record of the Arabs ever having used these *hourds*; and in any case, why should they employ them in a region so poor in timber as Damascus,[2] and for the protection of a tower already so well machicolated? It seems probable that these holes were for the supports of some variety of shutter to protect those fighting at the embrasures.

The difference between the arrangement of the lower parapet of this tower and that of tower 3 raises a matter of some importance: plainly tower 4 is the better planned, but what is the particular merit of the fighting gallery? It seems as if the soldiers at the loopholes and brattices were divided off, so as to avoid interfering with, or being hampered by, some activity conducted in the open space on the roof. Clearly this roof-space was meant for something; otherwise one would expect this stage of the tower to be roofed in; and I cannot think of any use to which it could better have been put than as the emplacement for a mangonel or other slinging engine. The vault is strong, the two-story parapet affords protection for the big machine, much taller than a man; the arm with its sling could cast a stone over the top, but it would need room on the upward sweep, and this the open back of the tower would assure it.

---

[1] About 10 ft. on the front of tower 3.

[2] The poplar serves as the local timber-producing tree.

These double parapets are common in the Levant; they are not peculiar to Ayyubide, or indeed to Islamic, military architecture;[1] in some places they are found on curtains, as at Le Krak des Chevaliers, but normally they form part of a tower, and in this case are almost always open at the gorge; the exceptions (of which tower 8 is one) are all very large square towers, where there would in any case be room for the arm of the engine to swing free.

As therefore the parapet is an improvement on that of tower 3, Sauvaget was disposed to consider it an alteration by later hands—reasonably enough, for whereas tower 4 bears two inscriptions recording repairs: one of Bybars, dated A.H. 659 (A.D. 1261, No. 8) and that of Qalawun, already mentioned, dated A.H. 680 (A.D. 1281), tower 3 has only al-Adil's founder's inscription, and shows not the slightest trace of any repairs. The inference is obvious: when Kitbogha's Mongols dismantled the citadel after its capture in 1260, they left tower 3 undamaged. Sauvaget, in drawing this conclusion, seems rather to have been surprised and unwilling to believe the evidence; however, it is clear that the destruction of so massive a fortress was an impossible task, and as Wiet points out, it was customary rather to break off the crenellations[2] and do other damage of a restricted nature. Even this would be a big business here, and one might expect to find part of the *enceinte* left undamaged. The side on which one would naturally look for damages caused by siege and by subsequent slighting of the defences would be the side facing away from the town and towards the outside world—here, the north and west; and it is precisely here that the citadel bears its worst scars. For it is not merely a matter of a single slighting in 1260; in 1300 the Mongols again took the city, and were only repelled from the citadel by the magnificent defence conducted by Alam-ed-Din Sanjar, surnamed Arjawash, its governor; in 1392 the citadel was stormed by loyal troops in the course of an abortive *putsch* against Sultan Barquq; in 1401 the city fell into the hands of Tamerlane, and the citadel, after a brave defence, followed. Now there is no doubt about the destruction that followed this last capture; a huge breach in al-Adil's line occurs at the north-west, and the secondary work bears the date 1406. On the other hand, there is no question of any damage to either of the towers now in question, for neither bears any fifteenth-century inscriptions; indeed, there are very few of these on the south and east sides of the citadel. One need therefore feel no surprise at the undamaged condition of tower 3; it remains to assess the extent of the repairs to tower 4, and especially to its parapet. At once we are able to find signs that the tower has been discrowned, but by no means to the extent that Sauvaget suggests; at C four of the merlons have been broken off and rebuilt in an inferior rubble masonry; for the rest, the facing of the tower is so perfectly homogeneous and unbroken that the whole must be of one date. We are left with the following surprising conclusion: two sultans have cut inscriptions on the tower to record repairs which can *at most* only have amounted to the opening of the two doors between the first and second floors, the consequent blocking of the stair below the first floor,[1] the rebuilding—perhaps—of the stair to the battlements, the four very inferior merlons, and the inscriptions themselves. This seems quite extraordinary, the more so as it is by no means certain that all the repairs mentioned can be ascribed to the sultans in question. However, it is necessary to make allowances for the personalities of the men with whom we are dealing; these Mamluk sultans were men of humble origin (to put it mildly) and like many self-made persons, were inclined to bombast and vainglory.[2] For example, there are recorded no fewer than eight inscriptions of Bybars in the citadel,[3] against six of al-Adil's; even at the highest estimate of the former's achievement, the gross immodesty of this disproportion will be obvious to everyone; and this example is fully consonant with the character Bybars bears among epigraphists.

---

[1] There are examples in the citadels of Cairo, Aleppo, and Jerusalem, the temple-fortress of Ba'albek, the Damascus Gate at Jerusalem, and the castles of Saône, Le Krak des Chevaliers, Kerak in Moab, and Tortosa. Others were until comparatively recent times to be seen at Giblet (Jebail), Margat (Markab), and the Talisman Gate at Baghdad; this is by no means an exhaustive list, and surviving examples are probably a very small minority of those originally built, many castles having lost their parapets altogether. In one or two cases on curtains the parapets are triple.

[2] 'Notes d'épigraphie syro-musulmane', *Syria*, vii, 52–3.

The tower, therefore, is essentially al-Adil's; less well preserved than its neighbour tower 3, it is still in excellent condition, and a most imposing monument to Ayyubide skill and energy.

Towers 5 and 6

Beyond this point the precincts of the prison begin. I presume it was the necessities of the latter that have led to the curtain 4–5 being much lowered in height, and the gallery blocked beyond the first recess from tower 4.

The difficulty of visiting and exploring buildings in use for prison purposes made my study of this part of the citadel rather limited; in particular I did not go inside either of the towers now under discussion; in the case of tower 6, this was no particular loss, as this tower is another example of the type with which I have already dealt at length; but tower 5 is a different matter, as it presents several points of interest.

It is a truncated structure, having lost both its parapets and its topmost story;[4] even what remains has been rebuilt; an inscription (No. 32) of Qansuh al-Gawri—the last Mamluk sultan to rule over Syria—on the east face of the tower, records its rebuilding in A.H. 919 (A.D. 1513); by the tenor of the inscription, the tower had been completely ruined; but this would appear to be hyperbole, for not only does the lower part of the structure at least appear to be al-Adil's, but an earlier inscription on the south face (No. 29) records repairs by an-Nasir Muhammad II, the son of Qait-Bay[5] in A.H. 903 (A.D. 1498). The plan of the basement can reasonably be compared with al-Adil's work elsewhere: two barrel-vaults intersecting to form a cross-vault at the angle; across the north of the cross-vault a wall dividing the floor into two chambers, and each main vault crossed by two subsidiary vaults at a lower level, as in tower 4; there are three arrow-slits on each face, and one in each flank, in the usual positions. The latrine and the ground-floor entrance are not quite where one would have expected them, but the stair is in the normal place. It seems safe, therefore, to take Sauvaget's second opinion[1] that the repairs were confined to the upper story.

---

[1] The first-floor door is almost certainly modern, as it is reached by an iron balcony from the roof of the gallery.

[2] It is perhaps no accident that almost the only accurate and modest building inscription of the Mamluk period in the citadel is that of an-Nasir Muhammad I (a prince by inheritance) at the east gate.

[3] Nos. 8–15.

[4] These are still to be seen in the photograph in von Oppenheim, *Vom Mittelmeer zum Persischen Golf* (Berlin, 1899), i, 64, together with the complete superstructures of towers 6 and 7, now destroyed. This photograph also shows a small brattice on the curtain 5–6, and the remains of the Turkish construction built over the barbican (*v. infra*, p. 78).

[5] Not to be confused with the earlier sultan, Qalawun's son, of the same name.

I am without information on the subject of this upper story, but photographs show that neither it nor the upper part of the tower—now vanished—presented any unusual features from the outside; in particular, they possessed no *gun-ports*. I say this somewhat unwillingly, for the fact is that the oblique and distant view, which is all that I was able to get of the exterior of the tower, led me to the mistaken belief that the large medallions of Qansuh's inscription were walled-up openings, and hence most probably gun-ports. These would be perfectly reasonable at the period, though Wiet[2] argues at some length on the question whether the Mamluks employed guns in their Syrian citadels. In fact, there is a fine artillery-tower projecting into the ditch at the citadel of Aleppo, bearing an inscription of Qansuh, dated 1508—five years earlier than the construction with which we are now dealing—and a tall gate-tower at the end of the bridge to the great gate, which dates from the same reign, and is also arranged to carry guns.[3] Under these circumstances it would seem probable that any serious work carried out by Qansuh in 1513 would be fitted for guns; this must cast further doubt on his claims to have rebuilt the tower.

The main gallery along the curtain 5–6, together with whatever building may have stood against it, has been pulled down; the four recesses in its curtain are so large that the prison authorities have established two cells in each.

Tower 6 is the smallest of its type; in general it resembles towers 2, 3, and 4, but its basement arrangements are slightly different. The latrine, which would have drained into the entry of the gate if it had been in the normal position, appears to be in the left-hand salient angle formed by the tower; and the entrance at basement level certainly runs straight into the foot of the stair, which is in the normal position; it is set under an inclined vault, like that in tower 3. The wall-walk is carried across the rear of the tower on two large arches. The parapet has been destroyed from the level of the corbels for the brattices. These corbels show that the tower was more weakly machicolated than any of the others which retain traces of this sort; its angle-brattices had four openings, the others only two. This tower is at present a gaol block, and a modern building of one story is superimposed on its roof.

The East Gate

The east gate of the citadel (fig. 2), opening on the town side, is of a type common in Islamic military architecture; basically, it is a gate in the flank of the big rectangular tower 7.[4] But to this normal oblique entrance a refinement has been added by crowd-ing towers 7 and 6 close together, so that their united defences were concentrated on the narrow space before the gate. This arrangement, which dates from Saladin's time at latest,[1] is found in its most highly developed form in the Great Gate of the citadel of Aleppo; it denied to the assailant the use of an adequate battering-ram and forced him to make his last, and critical, change of front under a shower of missiles and a cross-fire at point-blank range.

---

[1] 'La Citadelle', *Syria*, xi, 237; but cf. p. 74, where a contrary view seems to be expressed.

[2] 'Notes d'épigraphie syro-musulmane', *Syria*, vii, 62-6.

[3] Van Berchem and Fatio, *Voyage en Syrie* (Cairo, 1914), i, 210–11.

[4] It is about 90 ft./27·50 m. wide and projects about 36 ft./11 m. on the south.

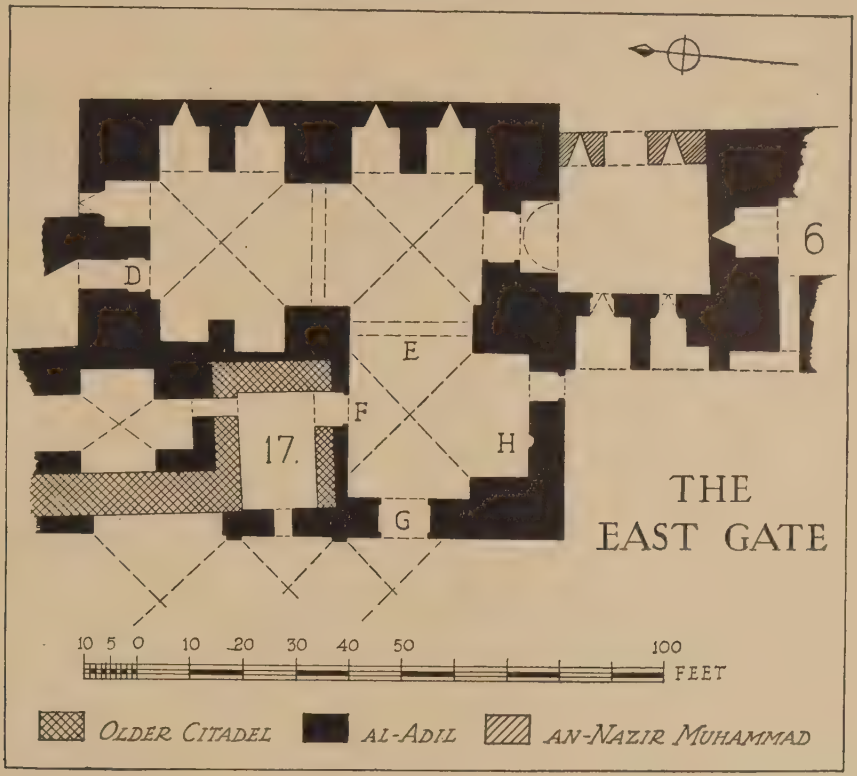


FIG. 2.

At a later date a light wall, with an outer gate, was built between the flanks of the two towers, enclosing the space between them as a sort of barbican.

The short curtain 6–7, at the back of this barbican (pl. XVII, *d* and *c*), contains two recesses for arrow-slits at ground-level; both of these have been enlarged, so that one can pass through into the barbican. This curtain is a remarkable structure; much the highest in the citadel, it reaches to the level of the roofs of the towers; in front, the base has the great rusticated facing-stones of al-Adil, but the upper portion is ashlar, and bears an inscription[2] of an-Nasir Muhammad I (the son of Qalawun) dated A.H. 713 (A.D. 1313—No. 20), recording the building of 'these *badana* (curtains)'—the use of the plural presumably including the outer wall of the barbican, which much resembles the upper part of the main curtain. The latter has three levels of defences: first, al-Adil's loop-holes at the base; second, on a level slightly above that of the wall-walk, a pair of brattices with one large slot each, and a single loophole between; third—almost level with the roofs of the towers—a single rather small brattice with three openings, between two arrow-slits. The entrances of the brattices are small and inadequate, and the third level of defences has no alure, and must have been reached by wooden staging. There is no trace of any crenellated parapet above, nor is it likely there ever was one.

---

[1] The little gate at the Burg az-Zafr at Cairo, and two gates in the citadel there (Bab al-Qarafa and Burg al-Matar), all Saladin's work, are examples of this form of entrance.

[2] This is the inscription already mentioned on account of the comparative accuracy of its claims.

The barbican wall much resembles the main curtain; on each side of the gate, which has a flat lintel with a low relieving-arch above, there is a loophole; above the gate a brattice of three openings, flanked by another pair of loopholes; and above again, a row of three rectangular openings—in fact, a crenellated parapet with lintels over the embrasures. These two upper levels are marked by set-offs on the rear of the wall; that on the intermediate level forms a ledge wide enough for use as an alure, but the upper one is much too narrow, and here, too, the alure must have been a wooden platform. Neither of these upper levels is reached from the towers, and access must have been by ladder.

There are traces of a building constructed over the barbican in Turkish days, but fortunately it has vanished.

The gate proper opens on the barbican; it is set at the end of a deep recess, which is covered in four rows of stalactite-vaulting, surmounted by a half-dome; the whole being painted in colours and strikingly agreeable in appearance (pl. XVIII, *a*). This town-gate of the citadel was plainly the principal entrance from the point of view of display; beside the gate are four inscriptions, none of them connected with building; three (Nos. 21, 25, and 26) record edicts; the fourth (No. 22) commemorates the storming of this gate on behalf of Sultan Barquq to which reference has already been made; it is dated A.H. 794 (A.D. 1392) and renames the gate 'Bab an-Nasr az-Zahiri'—Gate of Barquq's Victory.[1] The gate itself has an ornamented lintel set under a relieving-arch with joggled voussoirs. There is only a single great doorway, with no inner defences; nor is there any 'murder hole' or machicolation in the vault of the entry, as one would have expected; the only vertical defence is given by one of the brattices of the tower. It is not, in fact, a particularly strong gate, and one cannot wonder that an-Nasir Muhammad should have added his barbican.

Beyond the gateway one comes into a huge vaulted gate-hall, L-shaped, with two bays of cross-vaults in front and one behind, separated by the flat, plain ribs mentioned elsewhere. The purpose of this huge hall is best realized when one considers its employment during a sortie. We know that Arjawash made vigorous use of sorties in 1300, and we must also remember that the barbican did not form part of the original design. A great body of men could collect in this enormous room, *and they could all see what was going on around the gate.*

In the front part of the hall there are two recesses, with loopholes, in each bay; at the far end of the tower is a fifth; beside this is the doorway D, leading into the main gallery to the north.

---

[1] This name led Sobernheim to confuse the gate with Bab an-Nasr, a vanished town-gate near the south-west corner of the citadel, and as a result to misinterpret inscription No. 17, commemorating Qalawun's restoration of the main gallery.

The rear bay of the gate-hall is a single-story building, the tower proper only covering the front two bays; that is to say, the opening E is under the rear wall of the tower, which is carried over it on a great open arch, like an *iwan*, recently closed by a light wall. Out of the rear bay open three doorways; one, F, to the north, into a space which is, in fact, the archaic tower 17, and beyond it into a range of vaults at the back of the main gallery; the second, G—the main doorway—into the enclosure, and the third to the south, leading back along the gallery. Between these last two is the *mihrab* H; at least so I understand, for this angle of the hall is at present occupied by an unattractive little building labelled *Cellules*. Similar gateway shrines are found in the north gate, also at Ba'albek (where the structure has largely been removed), in the Great Gate of Aleppo, and at Le Krak des Chevaliers. I think I am right in regarding their purpose as being the spiritual protection of the gate, rather than the convenience of the persons using it.

The upper part of the tower is the female prison;[1] the parapet has been lowered to about half its height, but enough remains to show that the arrangement of the brattices was the same as that in tower 4, minus the large centre brattice of that tower.

Interior Buildings in the North-east Corner

The domestic buildings in this corner of the enclosure are much better preserved than elsewhere. In the angle behind al-Adil's big tower 8 is the stump of the old tower 16, a rectangular structure, built of large rough-faced blocks; from here a curtain runs south to the other original tower 17. Between this curtain and the rear of the main gallery is the long vaulted building 21. Behind tower 17 is the great vaulted room 22, with the remains of a dome in the centre of its roof. This great hall is part of the prison, but the long range 23 contains various regimental offices of the *gendarmerie*, and the building 24 at the far end (which is partly original and partly modern) contains harness-rooms, etc. To the north of this line of buildings comes an open courtyard, bounded on its north by the remarkable wall which joins the two old towers 15 and 16.

Tower 8

This large tower (pl. XIX, *d*) caps the north-east angle; it is the last well-preserved tower in the circuit, and at the same time the first to set the special problems of dating which the much damaged and patched north face of the citadel presents. It differs in plan from any tower so far dealt with, for it is almost square in plan (actually a trapezium). Its north face is 68 ft. 2 in./20·77 m. in length.

The upper part of this tower is used as a cell-block, but the basement is the officers' stable of the gendarmes; as a result, the entrance from the main gallery (J, fig. 3, *a*) has been walled up beyond the opening of the main stair, which starts from it; and the basement is reached from the northern terrace by an enlarged loophole. This basement is a large roughly square room, a hollow square rather, for the centre is occupied by an enormous solid pier, from which the vaulting springs, surrounding it in eight cross-vaulted bays.[1] At the end of each vault come the customary openings, the arrow-slits being set in recesses whose arches are in two plain orders. There are three on the faces of the tower and two on each side; or rather there were; for at the north-west angle three of them have been walled up. It will not escape the notice of the reader that the loophole of the recess at K will have been useless; indeed, it seems to me that the curtain to the west of the tower may originally have been intended to be some feet farther to the south. This may well explain the way in which the stair has been pushed up into the corner, so that it cannot gain height in the usual way by running right across the rear of the tower before crossing the line of the curtain, also the way in which the latrine has been driven out along the flank of the tower; as the building stands, there is no reason for so cramped an arrangement.

---

[1] A dovecote into which I did not attempt to penetrate.

As usual in al-Adil's work, the same singular plan is repeated on the two upper floors; on the second floor a little square room is contrived in the great pier. The steep stair is vaulted in a curious style, in lengths of barrel-vaulting alternately inclined and horizontal. It emerges at roof-level in the south-east corner of a fighting gallery like that of tower 4. Because of the use of the roof as some sort of exercise yard, the openings of the gallery, and its continuation beyond the first opening on to the roof, have been walled up.[2]

A glance round the roof-space shows that a great deal of change has taken place in its arrangements. At L (fig. 3, *b*) is a straight join in the masonry of the inner wall of the fighting gallery, after which this wall breaks off completely; the front wall continues for a few feet along the north side, in masonry which is not al-Adil's, then, after a single blocked loophole, breaks off at M, and is replaced by a plain wall, lower than the parapet and uncrenellated.[3] It is poor, shabby work, but contains four loopholes, narrower than the rest, but decently long (5 ft. 8 in./1·72 m.). This wall in turn ends at N, where al-Adil's original parapet begins again. At this point there is one side of an arched opening in the rear wall of the gallery, and a similar opening in the front—like a big window lighting nothing, or a door leading out over the drop on to the curtain; what purpose this served I cannot say.

At O is the way up to the battlements, now partly walled up, and closed with an iron gate; the wall blocking the entrance to the fighting gallery at this point is foundrous, and a little agility got me through, into a length of gallery of very ordinary stamp. In that portion which overhangs the enclosure there are no brattices, and the only two loopholes are set obliquely, like those in towers 3 and 4.

This is a point worth noting, for it bears directly on the question whether this tower is the donjon or keep of the citadel, as Sauvaget believes. He has presumably in mind its size and the way in which the parapet encloses the roof completely, instead of leaving the back open as in the other towers. As to the question of size, the tower is not notably larger than such towers as 5 and 9, and I am inclined to doubt whether it was any larger than tower 12, in its original form. As to the closed back of the tower, this 'back' is only the inner part of the flanks, whose outer portions had to be defended in any case; what is more, if the rear was not closed in some fashion, there would be a certain risk of part of the parapet being taken in reverse—especially the south flank—and its defenders shot in the back from outside the defences. Finally, this parapet, as we have seen, was not designed for defence against the enclosure. On the other hand, the normal qualities of a keep or donjon seem to be entirely absent. A keep was normally a lofty and dominating tower, the dwelling of the castle's master, and the last refuge of its garrison, being capable of holding out after the rest of the fortress had fallen. As to this, the tower is noticeably lower than the great towers on the south;[1] it is a particularly unsuitable dwelling, with its three huge rooms of most inconvenient shape; and in any case the sultan's quarters were in the palace 19 and the buildings which formerly surrounded it; finally, it is not fitted for independent defence, its basement doorway being, in fact, conspicuously weak.

---

[1] Qalawun employed the same disposition in his great square tower at the south of Le Krak des Chevaliers.

[2] I could not get into this part of the gallery as a result.

[3] It has lost a series of plain narrow merlons since 1914; see pl. XIX, *d*.

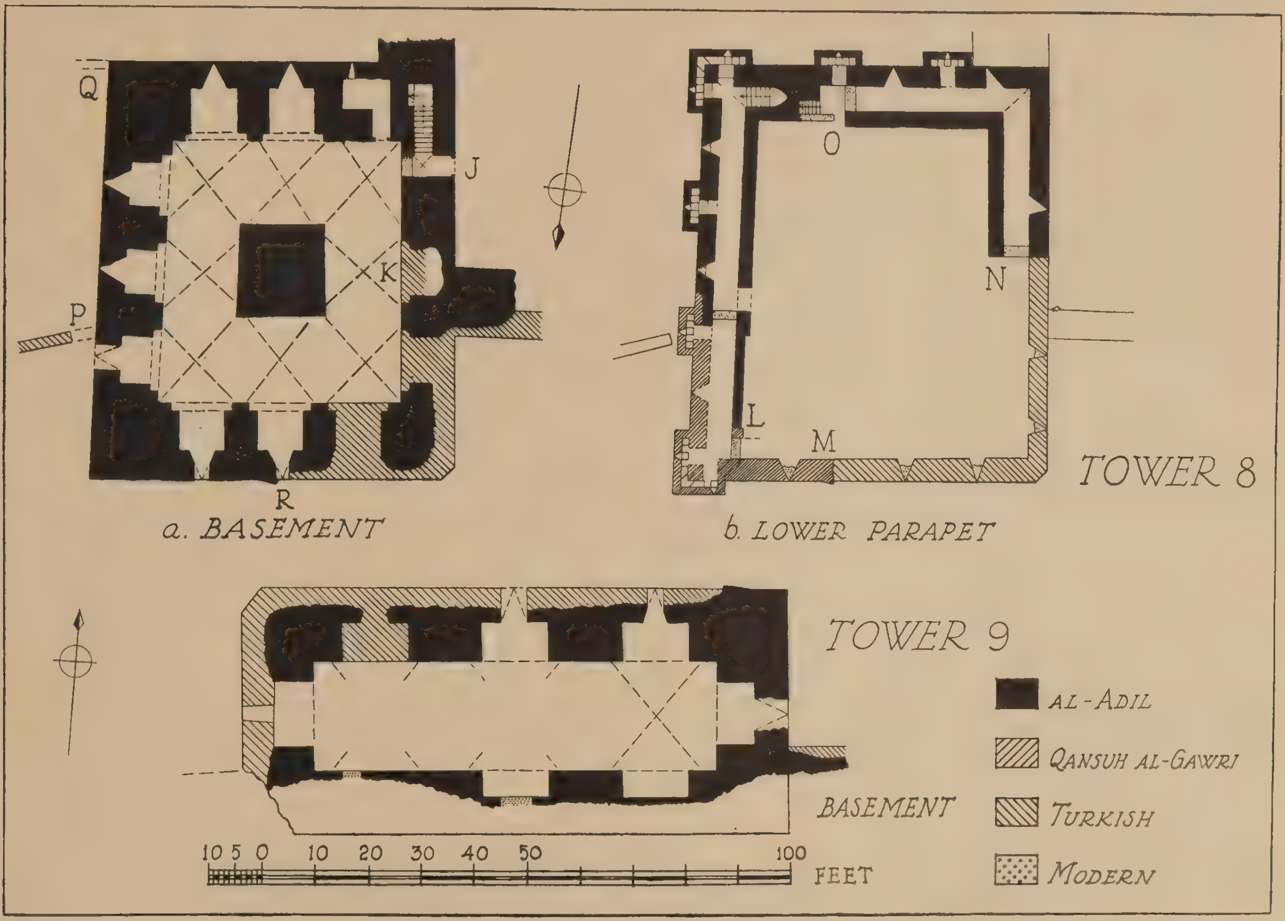


Fig. 3.

Externally, this tower meets the abutment of the town wall, which is continued across the site of the ditch by the narrow wall at P (fig. 3, *a*) a mere obstacle, and apparently of Turkish date. An older abutment may be marked by the springing of an arch which still remains at Q, pointing eastward from the angle of the tower. High up on this face is an arched window, and higher still a rebuilt section in ashlar masonry, embracing the whole north-east angle of the parapet, including two brattices. This, corresponding to the first rebuilt portion noticed on the roof (L to M, fig. 3, *b*), bears an inscription of Qansuh al-Gawri (No. 31) dated A.H. 915 (A.D. 1509); the workmanship is careful and ornate, perhaps a little too ornate. The five-slot angle-brattice, with its long corbel on the corner, of straight profile, joined to the neighbouring corbels by minature arches with black-and-white ornament, is particularly attractive.

---

[1] From a distance, tower 4 is very conspicuous; tower 3 only a little less so; it is not very easy to pick out tower 8.

At R (fig. 3, *a*) at ground-level, the characteristic masonry of al-Adil comes to an end at a great crack or discontinuity running up the face of the tower to point M in the parapet. The masonry to the right of this (pl. XIX, *d* foreground) is small ashlar work, carefully coursed and laid, the stones more or less cubical; so far it resembles the work of Qansuh, to whom Sauvaget rashly attributes it. But, far from being ornate, this new masonry is without any ornament, even without features. There is a slight difference in colour between the stone used in the parapet and that on the rest of this part of the tower, but their character is otherwise similar. There is no sign of any arrow-slits, except those in the parapet, and the corner is chamfered off, as if to avoid the use of quoins. Further, Qansuh's work ends at this great crack—if the name can be admitted when there is no structural flaw, as is the case here; it is therefore evident that this mysterious patching belongs to the Turkish period. Porter, who was here in 1850, is the earliest writer in whom I have found any mention of it; he describes the citadel in the following terms: 'The masonry is in general *rustic*; at the north-eastern angle, however, it is different, being composed of stones of various sizes. . . .'[1]

It will be noticed that the repairs only involve the outside of the tower; except for the walling of the loopholes, the interior is unaffected.[2]

Tower 9

The curtain 8–9 is of masonry much like that just described, but with a good deal of conspicuous reused work. It has the customary range of loopholes, but these are shorter than usual, and not at ground-level. From inside the stumps of the original curtain can be seen at the ends; the new curtain is very much thinner, and there is no trace of any parapet, or of any masonry alure for the line of loopholes, which must have been served by a wooden platform. The vault of the main gallery has, naturally enough, collapsed with the destruction of the old curtain.

Tower 9 (fig. 3) is a tower of the standard pattern (pl. XVIII, *b*); it is, however, much larger and more massively built than the others of its kind. It has now only two stories, and its exterior is marked in much the same way as that of tower 8. Here, however, the damage is more extensive; a greater area has been refaced (with the same chamfered angle, but a rather more noticeable re-use of old masonry) and at the same time all the loopholes of the face have been affected, those on the first floor having been rebuilt with square heads to their recesses. The two western bays of the ground-floor vault have fallen, but the upper vault is *in situ*, so that only a limited amount of harm can have befallen the interior of the walls.

---

[1] Porter, *Five Years in Damascus* (London, 1870), p. 18.

[2] Wulzinger and Watzinger (*Damaskus*, ii, 168) mark a rebuilt portion in the north-west angle of the second story, which is probably correctly shown, though it should be admitted that this plan differs from that of Sauvaget ('La Citadelle', p. 74) and that they mark a similar rebuilt section in the basement, which is certainly not there. In any case, however, the internal damage is extremely localized, and does not correspond with the exterior refacing.

Twice, then, we have the same feature; the *face* of each of these towers has been destroyed from top to bottom over a considerable part of the front, whereas the *interior* in the one case has only been damaged in part, and in the other is either intact or nearly so. At the same time, the intervening curtain has been shattered and breached. It is clear, from the character of the repairs, that all this damage occurred at a single date, and it has already been shown that this date must lie between 1509 and 1850. Viewing the damage with the eyes of an officer of artillery, I could reach only one conclusion: the agency which had brought it about could only be my own weapon. Further, I concluded, from the amount of useless damage done to the fabric, that the waste of ammunition had been great, and therefore that the gunners were unskilled or ill-commanded. In these conjectures it appears that I was right; in 1771 Muhammad Pasha Abu Dahab with an Egyptian army besieged Damascus, whose Pasha, after defending the town as long as he could, withdrew into the citadel,[1] and prepared to defend himself there. 'It was necessary to form a second siege, and it cost the Egyptians many efforts to get possession of it.'[2] Next year Abu Dahab withdrew, whereupon '. . . the Turks took, without a struggle, the cities he had taken from them, raised their walls, and added new fortifications'.[3]

The author of these passages also refers in the most decided terms to the lack of skill of the Egyptian artillery.[4]

It seems therefore that we are in the presence of the Turkish repairs of 1772; they were clearly carried out with the usual ineptitude of the Turks, though the quality of their masonry is not altogether bad.

The North Gate 10 (Bab al-Hadid)

Between towers 9 and 10 the curtain has disappeared except for a short stump abutting on tower 10. This ruin may well be of recent date; an inscription (No. 6, which had vanished at the time Sobernheim visited Damascus)[5] which stood 'on the north wall, by the canal' has disappeared. It was one of al-Adil's, and is not likely to have been anywhere else, except perhaps on tower 10. The wall which now bounds the citadel at this point is a low, massive affair of rusticated masonry, from which sprung the vault of the main gallery, which was here unusually wide, and also apparently rather low. It abuts on the flank of one of the remnants of the older citadel—tower 15, whose face supports the two surviving bays of this section of the gallery—which now form a forage store.[6] The masonry of this face forms a complete contrast to that of the rusticated wall; it is comparatively thin, and very roughly and badly built—scarcely more than a piling of stones on one another; in places light is visible between the stones.

---

[1] After the medieval fashion; *ville prise, château rendu* was the European practice at this time.

[2] Savary, *Letters on Egypt* (Dublin, 1787), ii, 127.

[3] *Ibid.*, p. 128.

[4] *Ibid.*, pp. 125–6.

[5] He was there in 1914; van Berchem had copied the inscription in 1894. It is possible that this wall was still standing in part at the time Sobernheim paid his visit, as it is shown on the plan to his article (*Der Islam*, xii (1922), facing p. 28).

[6] With the singular result that I could determine neither the arrangement of the door at the end of the

The gate itself consists of the normal rectangular tower—projecting rather more boldly than usual[1]—over the outer gate-hall. To the rear is a single-story continuation, consisting of the inner gate-hall and certain further structures, among which the entrance ran an almost unbelievably serpentine course. The tower proper is utterly ruined; only its rear wall is fairly complete; about half of the west flank—containing the outer gate—and a few feet of the west end of the face are standing; the rest is gone (pl. XVIII, *c*). There is, however, one singular feature: where the eastern flank of the tower abutted against the line of the curtain, at T, is the jamb of a *second gate*. There is no mistaking this; Sauvaget considered this gate to be the original Ayyubide entrance, and the other to represent a change in the plan dating from the time of Nawruz al-Hafizi, whose inscription (No. 23, dated A.H. 809/A.D. 1406) surmounts it. We are, in fact, approaching the great breach made by Tamerlane; but even so, there are certain points to be noted. First, the passage of the surviving gate is guarded by a small square 'murder hole' in the vault—an unusual feature which has been noted in some of al-Adil's towers; secondly, the top of this hole is in the floor of the archery-recess over the gate (the sole survivor of three that were here) in a curiously asymmetrical position. But it was not until I attempted to reach this recess by an uncomfortable climb along the top of the ruined wall round the north-west angle that I got an inkling of what had happened here. Though I failed to reach my goal I was rewarded for the risk of a ducking in the Banias by a significant discovery: the upper part of the very thick flank of this tower (17 ft. 2 in./5·25 m.) is a single thickness of masonry, but the lower part has a straight join running along it some 4 ft. 3 in./1·30 m. from the front; obviously it was thickened on the face, and since this thickening forms part of the work bearing the inscription of Nawruz al-Hafizi, it is evident that the inner part of the wall must belong to an earlier period than his. In view of the details and general appearance of the fabric, it seems fairly certain that it was the work of al-Adil. Evidently the upper portion of the flank of this tower was so ruined by Tamerlane's army that it had to be completely rebuilt at the same time as the thickening was applied.

If we are to admit the gate to be al-Adil's work—and the existence of the unusual type of 'murder hole' leaves us little alternative—it becomes clear at once that at some time at least this tower has been a *double gate*; also as far as can be made out from the scanty remains of the right-hand gateway, its form and dimensions may well have tallied with those of its companion. The two flanks were of almost equal thickness,[2] and indeed the whole outer gate-hall appears to have been uncommonly symmetrical. My deducation is that the double gate was part of the original plan. Such gates are

---

gallery, nor that of the arrow-slit in the side recess (S, fig. 4), both gallery and recess were blocked with fodder, and the outside of the wall had stones piled against it, masking the opening of the slit. Both these details, therefore, are supplied by conjecture. The stump of curtain at this point seems to have been refaced in part at some period.

[1] It is 97 ft. 6 in./29·75 m. wide, and 56 ft. 9 in./17·30 m. in depth. Its projection is about 46 ft./14 m.

[2] The west flank (less thickening) 12 ft. 11 in./3·95 m.; the east 13 ft. 1 in./4 m.

rare enough, but not altogether unknown; there is a set of three in the almost contemporary Crusader castle of 'Atlit.[1]

Alongside the left-hand gateway, at V, is a large and deep recess, penetrating almost the whole way through the older work. It would appear to be the recess of a loophole, enlarged when the wall was thickened, as if a fresh loophole in the new face of the wall was intended. No such loophole was ever made, and the plaster which lines the inside of the recess prevents any proper examination at this point.

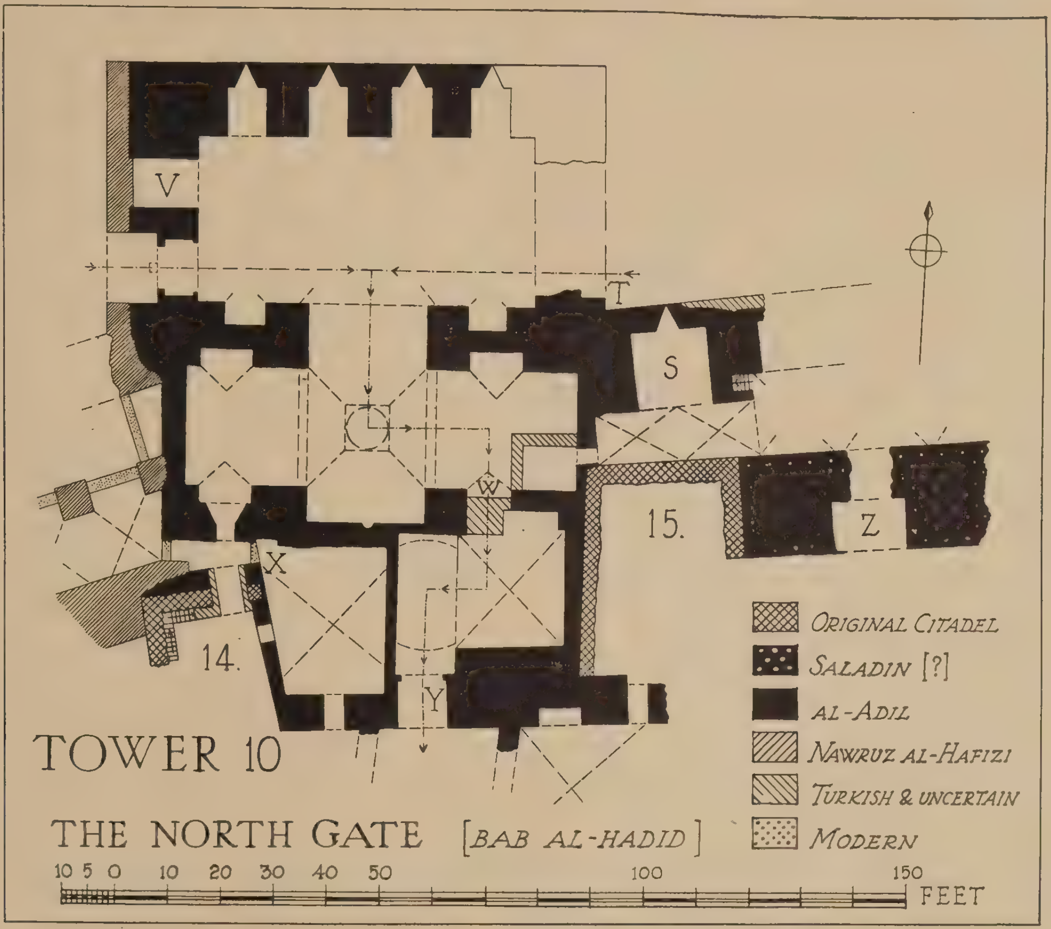

V
T
S
W
15.
Z
X
14.
Y
TOWER 10
THE NORTH GATE [BAB AL-HADID]
ORIGINAL CITADEL
SALADIN [?]
AL-ADIL
NAWRUZ AL-HAFIZI
TURKISH & UNCERTAIN
MODERN
10 5 0 10 20 30 40 50 100 150
FEET

FIG. 4.

The great archway opening into the inner gate-hall has been closed by a partition, and the hall itself is now a lecture-room. It is a great cruciform chamber, with a long pointed barrel-vault intersected by a shorter one in a cross-vault at whose crown is an opening surmounted by a small cupola—an unusual feature in this position, according to Sauvaget.[2] On each side of the main vault are two arched recesses; at present the entrance is through the south-western of these, by way of a passage which has obviously been slapped crudely through the wall. The south-eastern recess, at W, is blocked rather roughly, and it was through this that the entry originally led. The corner beside this has been walled off into a cell or compartment which can only have been reached from the forage-store to the east.[1] Also in this end of the room are a funeral shrine and a couple of tombs; at the south of the cross-vault is a *mihrab*, recalling that at the east gate. Passing out through the slapped passage, one first crosses a narrow corridor, blocked on both sides. This corridor is covered in a half-vault, which seems to suggest that it is an addition to the main part of the structure; if so, it is an early one. Its uneven width, however, may indicate later changes.

---

[1] Johns, 'Excavations at Pilgrims' Castle, 'Atlit', *Quarterly, Department of Antiquities, Palestine*, iii, 152–9.

[2] 'La Citadelle', *Syria*, xi, 77. There was a similar cupola in the big south-east tower of Ba'albek. Here its

At the end of the passage is a small yard, partly enclosed in a curious piece of wall, part of the older citadel and a fellow to the tower on the other side of the gate. These two—14 and 15—are an original pair of gate-towers,[2] 14 is, if anything, the worse built of the two; its very ragged internal face suggests most forcibly the existence of some filling or other when it was built. There is a rectangular opening in the front of the tower, and a stair has been built across its rear.

At the rear of the gatehouse (pl. XVIII, *d*) is a row of constructions of somewhat irregular plan. The most westerly is a large cross-vaulted chamber now used as a band room. It has no features calling for remark except a small niche in the wall at X, where the corridor already mentioned probably entered it. There is no sign of a doorway, but as the floor of the room is greatly raised, being more than 6 ft. above the level of the corridor and the inner gate-hall, this is not altogether surprising. There is no sign either of any door opening eastward from this room into the last element of the original entrance passage.[3]

Next comes the rear gateway of the entrance (Y, fig. 4) set at the end of a deep recess with a singular trefoil head which has absurd reversed voussoirs at the head and the junctions of the lobes. Beneath this is a circular opening surrounded by an undated inscription of al-Adil (No. 7). The gate itself has a lintel under a low segmental relieving-arch; it opens into a curious chamber, cross-vaulted, with one of the intersecting vaults produced to span the western part of the room at right angles to the entrance. This part of the vault, which has now collapsed, sprang from two low subsidiary vaults of segmental form. The cross-vaulted portion is now partitioned off and used as a forage-store. In its north wall is a walled-up opening—in fact, the back of the recess at W.

This northern entrance to the citadel, then, was a remarkable affair, almost unbelievably serpentine. As Sauvaget has pointed out, it reproduces the dispositions of the Great Gate of the citadel of Aleppo; but it reproduces them with a significant difference: at Aleppo there are three strong gates to bar the entry; at Damascus there were only the outer gates and a possible gateway concealed in the blocking at W, for the

---

purpose is clearly to light a room which can have had little or no other lighting. It may well have been a later addition, as it seems probable that the passage was originally intended to run straight on, through the central archway, which would have admitted sufficient light.

[1] The door, as I have mentioned, was completely inaccessible under a pile of forage.

[2] Which Sauvaget has identified with the old Bab al-Hadid ('La Citadelle', *Syria*, xi, 79–80).

[3] Sauvaget marks one and it seems extremely likely that such a door existed.

gates at Y closed against the interior of the citadel. It seems strange to a Western eye that this long serpentine passage should almost lack doors. The reason seems to be the curious one that these bent Oriental entrances are designed to guard against a sudden rush of cavalry, and it must be admitted that such an entry as this would take the impetus out of any cavalry charge without assistance from doors. Further, it would certainly seem as if the last elements of the passage had been added as an after-thought; the curious shapelessness of the buildings at the rear of the inner gate-hall seems to suggest as much,[1] as the east gate was strengthened on the outside, this more exposed entrance was given added strength internally. The after-thought, however, was unquestionably al-Adil's; the inscription at Y makes this clear enough.

Of the superstructure of the tower little remains but the rear wall. Its weight is taken, over the wide arch between the two gate-halls, by two inclined courses of masonry of large size, meeting at the top in an obtuse angle. From the level of the first floor the usual straight stair in the thickness of the wall crosses the rear of the tower from left to right; in this case it is set under a continuously inclined vault.

Before continuing with the circuit it will be best to consider the remarkable wall to the east of the gate, joining the two old towers 15 and 16. Immediately to the east of the last-mentioned work there is a breach in this wall where a recess of some kind has been broken through (Z); at this point the thickness of the curtain is no less than 18 ft. 5 in./5·60 m.; I do not recall any single-built masonry curtain of a similar thickness in any place where I have ever been, or of which I have ever heard, and what makes it all the more curious is that this wall was clearly never either an exterior wall or even a defensive line of al-Adil's citadel. In its present form it is quite low, and the face of it bears traces of the vault of the chamber between it and the curtain. On the other hand, it seems quite clear that it is older than these; the back of the vault was roughly raggled into the face of the great wall, which is still in a heavily rusticated masonry little suited to the inside of a building; moreover the vaulted chambers along the curtain here were vastly wider than the rest of the main gallery. The great wall, then, was a curtain, but a curtain of the *older* citadel, connecting the two old towers already mentioned. But this is not the end of the problem: it connects the towers in a very curious fashion, being flush with the face of tower 15 and almost flush with that of 16. This is not so scientific a disposition as one would have expected from the builders of so massive a line of defence, but the explanation is probably that the older towers were disregarded, and the building of much more substantial works to flank the great curtain was intended. It follows to consider who built this extraordinary line of wall; since it forms no part of al-Adil's plan, and yet seems to envisage a most radical rebuilding of this front, it is tempting to ascribe it to Saladin,[2] but it must be confessed that the rusticated masonry, and the manner in which it was built in front of the probable line of the ancient curtain—precluding the necessity of removing the latter—suggest at least as convincingly that al-Adil himself was the builder; in which case the great curtain would form part of an earlier plan of reconstruction, which was never completed.

---

[1] The curious thinness of the wall of the inner gate-hall containing the *mihrab* should be noticed. The exact thickness shown in the plan cannot be guaranteed in view of the great difficulties involved in measuring this tower; but it is quite certainly very thin.

[2] This attribution to Saladin was unfavourably received by Professor K. A. C. Creswell of Cairo, whose opinion must carry very great weight.

Tower 11

To the west of the gate-tower there is a breach in the wall revealing a vaulted structure built against the curtain, and taking the place of the main gallery;[1] farther west again, however, where the wall still stands, the gallery reappears. It is covered in a pointed barrel-vault instead of the cross-vaulting used elsewhere, and there seems little doubt that the whole of this curtain has been rebuilt, no doubt at the same time as the gate itself. There are two surviving loopholes; then the entrance to the basement of tower 11 is reached (fig. 5).

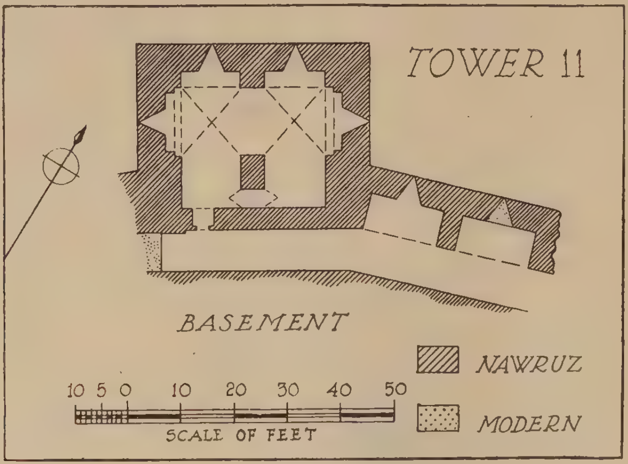


Fig. 5.

This tower is by far the smallest in the citadel,[2] albeit in a less remarkable fortress it might well be reckoned large. Its small size, curious plan, thin walls and indifferent masonry, and most of all, perhaps, the absence of any stairs in its two surviving stories all mark it off from al-Adil's work. The basement is cut off from the citadel, as there is no access to it except by the gallery which can now only be entered from outside; it is used as a pickle-merchant's store. There are two cross-vaulted bays, springing from a rectangular pier built against the south wall, but pierced by a low arched opening. There are two loopholes in the face, and one in each flank. The first floor is almost exactly similar, but there is a small latrine in the south-west corner, the entrance is differently placed, and the supporting pier is solid.

Externally the tower, and indeed the whole of this sector of the defences, as far as the west flank of tower 10 on the one side and the base of tower 12 on the other, presents an appearance different from anything so far described. The masonry, to be brief, is bad; it has neither the rugged grandeur of al-Adil's work nor the tidiness of the ashlar repairs to it; it is a mere open-jointed agglomeration of re-used materials, piled higgledy-piggledy, in reasonable courses indeed, but with little attempt to preserve bond. A good many of al-Adil's big rusticated facing-stones appear in it, generally cut down in size, as if they had been damaged and recut; the best of these are in the flank of the gate 10. There are two big inscriptions: that already mentioned on tower 10, commemorating its rebuilding by Nawruz in 1406, and a big florid inscription of Qansuh al-Gawri (No. 30, dated A.H. 914/A.D. 1508) across the face of tower 11, claiming for that sultan the rebuilding of the tower after its destruction. This position left an interesting problem for solution, namely: how much of the work could be attributed to each of these rulers? This was the more difficult in view of the similarity of the masonry throughout this part of the defences, and perhaps the relatively high quality of that of tower 10 might have led one to attribute the repairs to that tower to Nawruz, and the rest to Qansuh. However, an entirely different complexion was put on the whole matter by the discovery in 1924 of a fragmentary inscription on curtain 11–12; it lacks a date, but the name of Nawruz al-Hafizi is clear enough.

---

[1] This has been walled and partitioned off, and is now inaccessible, so that its junction with the gate-tower as shown on the plan is largely conjectural.

[2] About 34 ft. by 43 ft. (10·70 m. by 13·50 m.).

Now it is worth while to recall the circumstances in which Nawruz was placed in 1406. The Tartars had left Damascus, having inflicted at least some damage on the citadel; their return was always to be expected. Nawruz was governor of Damascus[1] and a notable troublemaker, even for a Mamluk; in 1406, at the date of his inscription on tower 10, he was in open revolt, as he was at intervals from his investiture in 1404 until he met with the fate he richly deserved in 1414. It is immaterial whether he was fortifying himself against the Tartars or his own sovereign; it is obvious that he had reason to rebuild the defences of the citadel quickly, and the whole of the sector now under discussion looks exactly as one might imagine it would look if it had been rebuilt in a hurry in some factious time,[2] but with plenty of good building stone, of rather assorted quality, available in the slighted part of the citadel and in damaged buildings in the town. This casts a good deal of doubt on Qansuh's claim to have built tower 11, since this tower accords well with the above description, and does not in the least resemble the careful work carried out by this sultan on tower 8. Certainly it is a great deal more like the rather haphazard stonework around Qansuh's great inscription on tower 5, but this does not mend matters, as this latter inscription has been shown to be thoroughly boastful and untruthful. Here again on tower 11 there are no gun-ports in the two surviving stories, and it seems likely that any substantial work on the part of Qansuh must have been confined to the vanished upper part of the tower. Sauvaget, who also suspects Qansuh's claim, points out that an armorial bearing which appears on the face of the tower, below the great inscription, is exactly like others in Nawruz's two inscriptions, which may very well signify that an inscription of this governor has been obliterated by Qansuh's.

Tower 12

The next length of curtain is in poor shape; its parapet and upper portion are gone, and the facing has fallen from about half its height upwards; a mass of builder's rubble obscures its foot, and such of the facing as remains visible is very poor indeed. Of the four loopholes which Sauvaget found I only succeeded in finding two, one being damaged. As Sauvaget shows them, they had curious lintel-heads, into which the top of the slit was cut, surmounted by an ornamental motif—a goblet, a star of six points, or an endless cord.

---

[1] The provincial governor, not the constable of the citadel, who was a separate personage, directly responsible to the sultan and—in normal times—outside the governor's control.

[2] It is worthy of note that in the troubles of the early part of Nawruz's governorship, no attempt seems to have been made to use Damascus as a fortress; it was repeatedly evacuated without a fight.

The curtain ends in a short crooked section (A, fig. 6) so ruined as to leave little or no evidence of why it was so built, abutting on the big square tower 12.

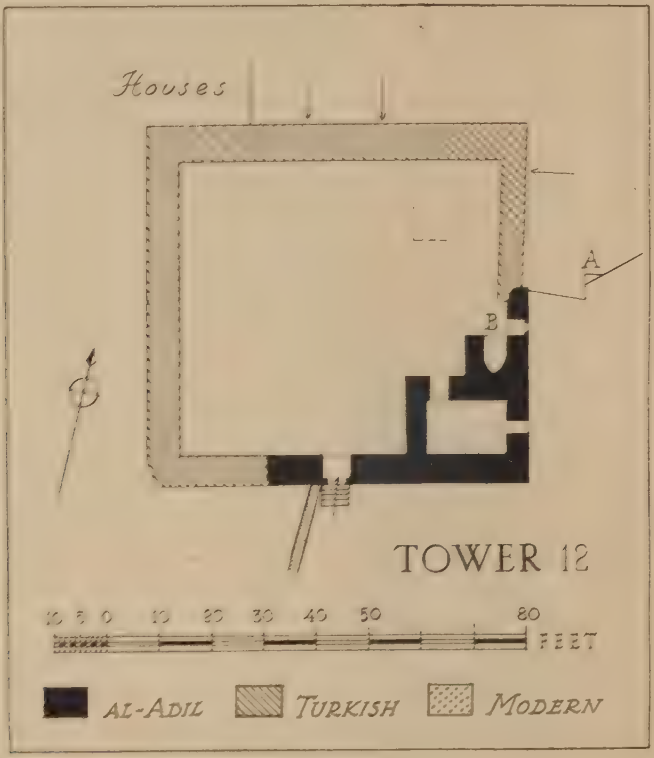


Fig. 6.

Externally this tower presents a curious appearance; for about 5 ft. of its height it is of the same crude rusticated masonry as its neighbour, tower 11; in this section appear parts of three arrow-slits; that on the east flank has closed up under some violent cracking of the structure. The positions of these slits (marked with arrows on fig. 6) do not correspond with any of the plans of al-Adil's towers, and I think it safe to ascribe the base of the tower to Nawruz al-Hafizi.

Above this base rises a solid, blank surface of the same indifferent ashlar as that which appears on towers 8 and 9; among its re-used stones is one cut in a six-pointed star. Clearly this tower, already rebuilt by Nawruz, was shattered by the guns of Abu Dahab; its manner of rebuilding was even more unenterprising than that of its fellows, for its basement seems to be filled by a solid mass of rubble, while its only story is a mere open courtyard, enclosed toward the field by a lofty, perfectly blank wall. If this ever had a parapet, it has disappeared.

In the south-east corner of this story is a single room, part of an older structure,[1] whose masonry—well-laid rusticated work—proclaims the hand of al-Adil; I could not get into this room, which is covered in a pointed barrel-vault. None of the present openings of this part of the tower seem to be original, but the remains of a stair, filled in to ground-level, are to be seen at B in the east wall. Set under an inclined vault and rising from left to right, it is just what one would have expected. The springings of barrel-vaults remain along the outside of the walls enclosing the room, and I am strongly of the opinion that the plan of this tower was originally that common arrangement, with a large cruciform or T-shaped central room and smaller chambers between its arms, that is frequently found in Ayyubide and Mamluk towers, such as the Burg Kerkyalan at Cairo and the south-east tower at Ba'albek. This, however, must remain a conjecture. I feel, none the less, that the clearing out of the basement might bring some interesting information to light.

The West Face

Returning to the western front of the defences, and so completing the circuit, there is little to note beyond the range of loopholes still remaining in the northern part of the curtain 12–13, and the single significant fact that this, the longest curtain in the perimeter, and situated on what was the most exposed side, is not straight, but has a very obtuse salient angle in the middle. When one examines the rest of the citadel—in which all the curtains are straight and every tower covers an angle—it becomes apparent that this angle must mark the site of a tower—probably a gate-tower, as the Bab as-Sirr seems to have been here; but of what form, it would be unprofitable to consider.[2]

For the rest, this front is completely shut in between the shops in front and the barracks behind. The section over the gate looks a good deal altered, and, from a comparison with the north front, one would expect the concealed portions to be very mixed in character; exposed as it was, this front seems likely to have borne its share of battering[3] and slighting.

I wish to acknowledge my debt to all who have helped me with the preparation of this paper, and particularly Professor K. A. C. Creswell, F.S.A., and Mr. C. N. Johns; to the authorities of the Citadel for their courtesy and kindness; to Dr. R. C. Smail for permission to use his photographs for plate XVII, *a*, and plate XIX, *a* and *b*, and to the Herzfeld Archive, Freer Gallery of Art, Washington, U.S.A., by whose courtesy the remaining photographs appear.

---

[1] The new and old parts of the east wall are not in alinement (see fig. 6).

[2] D'Arvieux (*Mémoires*, ii, 449–51) describes the citadel as having fourteen towers, two on each of the short faces. Unless the two on the west face were abnormally small, there would hardly be room for them, and it is significant that D'Arvieux entered the citadel by the east gate where there are two towers, and that he was in disguise, and dared not make a long examination. Under these circumstances an error of the kind is very understandable; for a much more alarming miscount of the towers, see Porter, *Five Years in Damascus*, p. 18.

[3] From the location of the Turkish repairs, Abu Dahab's battery position of 1771 was to the north-west of the citadel, probably on the high ground near the foot of the Salahiyeh road, and thus in a position equally effective for battering the west face.

APPENDIX A

SUMMARY OF THE INSCRIPTIONS OF THE CITADEL

No.	*Published by*	*Position*	*Date*	*Summary of contents*
1.	Wiet (*Syria*, vii, 48–9).	(Not in position; discovered in rubbish. Must have formed part of a round tower.)	A.H. 574 (A.D. 1178–9).	Saladin; repair of tower.
2.	Sobernheim, No. 1.	Face of tower 4.	A.H. 605 (A.D. 1208).	Al-Adil; foundation inscription.
3.	,, ,, 2.	Face of tower 2.	A.H. 606 (A.D. 1209).	Al-Adil; al-Mansur Muhammad conducting the work; foundation inscription.
4.	,, ,, 3.	East face of tower 8.	A.H. 606 (A.D. 1209).	Al-Adil; foundation inscriptions.
5.	,, ,, 4.	Face of tower 7.	A.H. 610 (A.D. 1213).	
6.	,, ,, 5.	(Vanished; was on north wall, perhaps 9–10.)	A.H. 614 (A.D. 1217).	
7.	,, ,, 6.	Rear of north gate (at Y, fig. 37).	N.D.	
8.	,, ,, 7.	Face of tower 4.	A.H. 659 (A.D. 1261).	Bybars; commemorating repairs.
9.	,, ,, 8.	Front of curtain 7–8.	A.H. 659 (A.D. 1261).	
10.	,, ,, 9.	Face of tower 7.	A.H. 673 (A.D. 1274).	
11.	,, ,, 10.	Face of tower 6.	A.H. 676 (A.D. 1277).	
12.	Sauvaire ('Description de Damas', *Journal archéologique*, 1894, i, 482–4), No. 542.	(Not in existence; somewhat suspected of being the same as 11.)		
13.	Sauvaget (*Syria*, xi, 227).	Re-used on tower 11.	N.D.	Fragments, including the name of Bybars.
14.		Re-used on towers 8 and 9.	N.D.	
15.	,, (*Ibid.*, 228).	Front of curtain 2–3 (3–4?).	N.D.	Greatly damaged inscription, attributed to Bybars.
16.	Sobernheim, No. 11.	Centre brattice of tower 4.	A.H. 680 (A.D. 1281).	Qalawun; commemorating repairs to tower.
17.	,, ,, 12.	Rear of tower 9.	A.H. 689 (A.D. 1290).	Qalawun; commemorating repairs to main gallery.
18.	Sauvaget (*Syria*, xi, 230–1).	Inside main gallery, behind curtain 7–8.	1288–90.	Qalawun (appears to be the twin of No. 17).
19.	Sobernheim, No. 13.	On arch behind palace.	N.D. (A.D. 1290–1302).	Arjawash, the governor; fragment, without sultan's name or description of work commemorated.
20.	,, ,, 14.	Front of curtain 6–7.	A.H. 713 (A.D. 1313).	An-Nasir Muhammad I, commemorating building of front and rear of barbican.
21.	,, ,, 15.	Over east gate.	A.H. 781 (A.D. 1379).	Al-Mansur Ala-ed-Din; financial edict.
22.	,, ,, 16.	,, ,, ,,	A.H. 794 (A.D. 1392).	Barquq; commemorating victory of the royal troops, renaming the gate 'Bab an-Nasr az Zahiri'.

No.	*Published by*	*Position*	*Date*	*Summary of contents*
23.	Sobernheim, No. 17.	West flank of tower 10.	A.H. 809 (A.D. 1406).	Nawruz al-Hafizi; commemorating repairs to gate-tower.
24.	Sauvaget (*Syria*, xi, 235–6).	Front of curtain 11–12.	N.D. (before A.D. 1414).	Nawruz al-Hafizi; fragment.
25.	Sobernheim, No. 18.	Right post of east gate.	A.H. 824 (A.D. 1421).	Edict of az-Zahir Tatar.
26.	,, ,, 19.	Left post of east gate.	A.H. 825 (A.D. 1422).	Edict of Barsbay, for upkeep of a saint's tomb.
27.	,, ,, 20.	Face of tower 2.	A.H. 866 (A.D. 1462).	Khoshqadam; commemorating rebuilding of tower.
28.	,, ,, 21.	Face of tower 2.	N.D.	Fragment.
29.	,, ,, 22.	South face of tower 5.	A.H. 903 (A.D. 1498).	An-Nasir Muhammad II; commemorating rebuilding of tower.
30.	,, ,, 23.	Face of tower 11.	A.H. 914 (A.D. 1508).	Qansuh al-Gawri; commemorating complete rebuilding of tower.
31.	,, ,, 24.	East face of tower 8.	A.H. 915 (A.D. 1509).	Qansuh; commemorating rebuilding of tower.
32.	,, ,, 25.	East face of tower 5.	A.H. 919 (A.D. 1513).	Qansuh: commemorating complete rebuilding of tower (in fact, this was only rebuilt in part).

APPENDIX B

WALL THICKNESSES

Curtains			
1–2	16 ft. 1 in./4·90 m. 12 ft./3·65 m.	9–10	14 ft. 9 in./4·50 m.
		10–11	11 ft. 9 in./3·60 m.
2–3	15 ft. 9 in./4·80 m. 15 ft. 5 in./4·70 m.	Old curtain 15–16	18 ft. 5 in./5·60 m.
3–4	14 ft. 9 in./4·47 m.		
6–7	14 ft. 5 in./4·40 m.		
Barbican	6 ft. 2 in./1·87 m.	Turkish curtain 8–9	5 ft. 3 in./1·60 m.
Towers			
2 (face)	10 ft. 3 in./3·17 m.	9 (face)	13 ft. 5 in./4·10 m.
(E. flank)	11 ft. 4 in./3·45 m.	10 (face)	13 ft. 5 in./4·10 m.
4 (face)	11 ft. 3 in./3·42 m.	(E. flank)	13 ft. 1 in./4·0 m.
7 (at gate)	14 ft. 5 in./4·40 m.	(W. flank)	17 ft. 2 in./5·25 m.
(N. flank)	13 ft. 4 in./4·07 m.	11 (face)	8 ft./2·45 m.
8 (S. flank)	14 ft. 6 in./4·42 m.	(flank)	8 ft. 4 in./2·55 m.
(W. face)	12 ft. 6 in./3·82 m.	12 (E. flank, Turkish)	5 ft. 11 in./1·80 m.
(N. face)	13 ft. 5 in./4·10 m.	14 (facing only)	2 ft. 11 in./90 m.

The above examples are all obtained by direct measurement.

APPENDIX C

A FORTIFIED MILL ON THE BANIAS

THE city wall of Damascus, close to its junction with the north-east corner of the citadel, is doubled by an exterior line, ranging along the banks of the Barada (C, fig. 7) while the inner wall follows the line of the Banias (D). At the end next the citadel these two lines of defence are united by a singular building standing astride the space between them, and bridging the Banias, whose waters, passing beneath its floors, drive the wheels of the mill which still occupies the building.

The mill forms a right-angled salient whose two sides are about 90 ft. (28 m.) in length; it is not a separately defensible work, or even a distinct structure in its present form, for its rear is encrusted with shops built against it, so that it is difficult or impossible to determine its plan on the side of the town. Certainly, however, it consists at present of a large vaulted hall, approximately 50 ft. (16 m.) square, occupying the angle of the salient, and two narrower wings, completing the flanks. The east wing rests against the side of the town-gate on the outer line, the Bab al-Faraj (E, figs. 7 and 8), the south wing returns upon the inner line, with the inner town-gate just inside it (F, fig. 7). Westward from the point of junction, the city wall is represented only by a single short length of curtain through which has been driven an arch (G, fig. 7) communicating with the terrace along the north of the citadel; it has been walled up in modern times, and cannot itself be old, as it cannot have served any purpose before the making of the terrace. Just beyond the arch the wall proper ends, on what must have been the lip of the citadel ditch, and the last few feet of the line are only represented by the thin wall already mentioned (P, fig. 3, *a*, and H, fig. 7).

Viewed from the terrace to the west, the mill is a big block of building, its wall rising from a row of blunt-ended piers running across the Banias, from whose end a weir turns to join the spit of land between the two streams. Part of the Banias goes over the weir, part between the piers and through the mill. There are two rows of arrow-slits, with five in each; those in the upper row do not alternate with those below, nor are they superimposed above them; there seems to be no connexion between the arrangements of the two rows. The masonry is ashlar; large blocks up to, but exclusive of, the heads of the loopholes in the lower line, smaller blocks above. The heads of the lower line of arrow-slits are cut into the lintel-stones in a way which recalls the slits in curtain 11–12, the work of Nawruz al-Hafizi; but there is no ornament on the lintels.

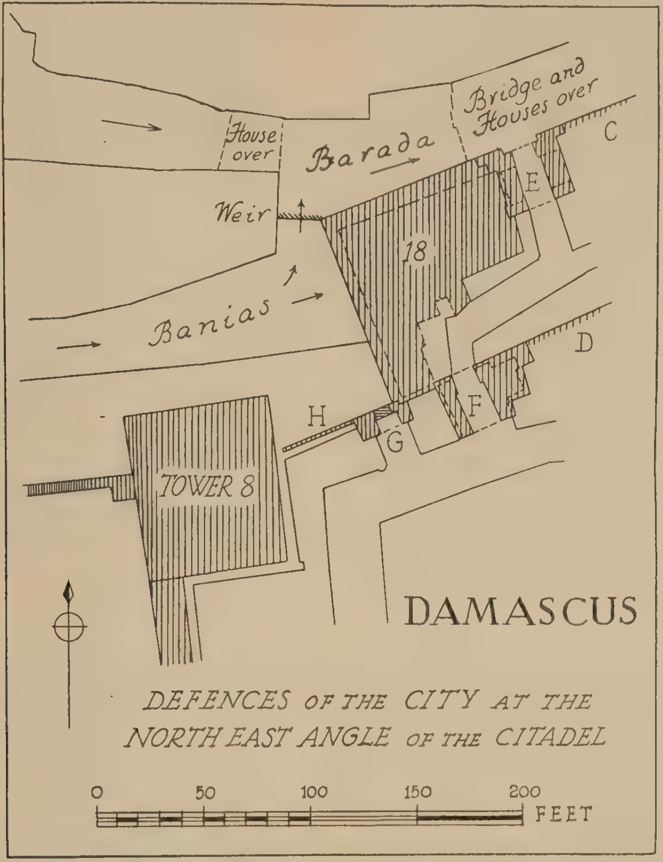


FIG. 7.

The basement of the mill is entered by way of the inside corner of the central hall; the latter, though partitioned off by the modern millers, is still a huge and impressive apartment, with its numerous cross-vaults springing from twelve stout piers, each about a metre square. The western row of bays is the widest, and continues to form the south wing; there are five loopholes in the side of the hall, and another, without an arched recess, in the wing; this and a small doorway between it and the last loophole in the side of the hall (J, fig. 8) are both blocked by the earth of the terrace.

The thickness of the west wall of the salient increases from 5 ft. 8 in./1·72 m. near the angle to about 6 ft./1·82 m. at the most southerly loophole. A similar tapering can be observed in the north wall, which rises in thickness from 7 ft. 10 in./2·40 m. at the angle to 8 ft. 10 in./2·70 m. at the last of the five loopholes, which opens from the eastern wing, a curious appendage, with two bays of cross-vaults in different rows, and three deep recesses in its walls. The next loophole to the west (K, fig. 8) has been chiselled out to take a small horizontal mill-wheel, and next to this is the stair communicating with the upper floor.

Here I was only able to see the western face; there are five arrow-slits, only about 3 ft. long, set under tapered vaults of the usual form, such as are used also over the slits in the basement.

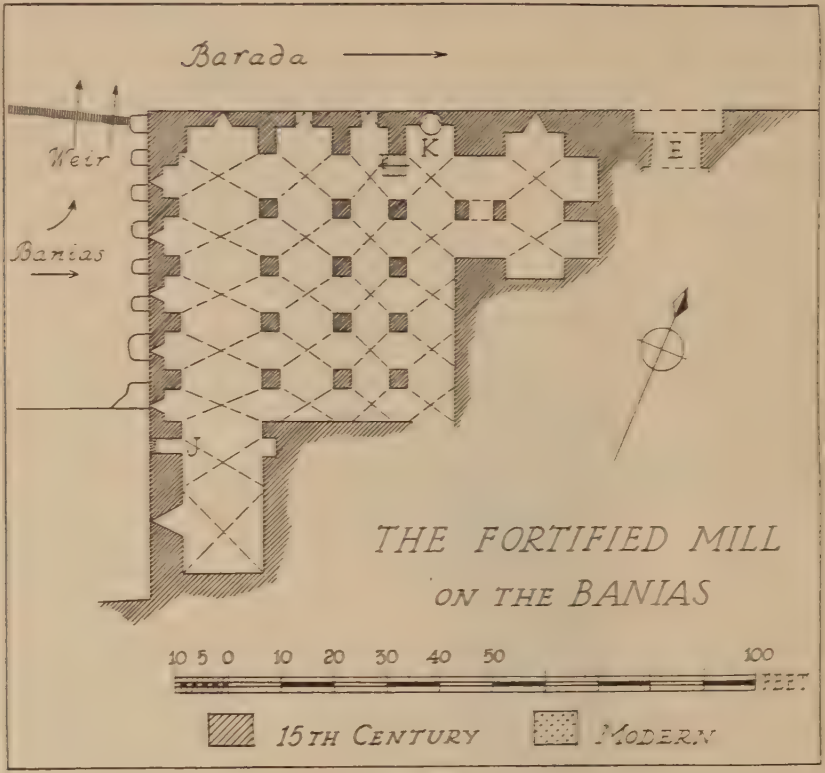


Fig. 8.

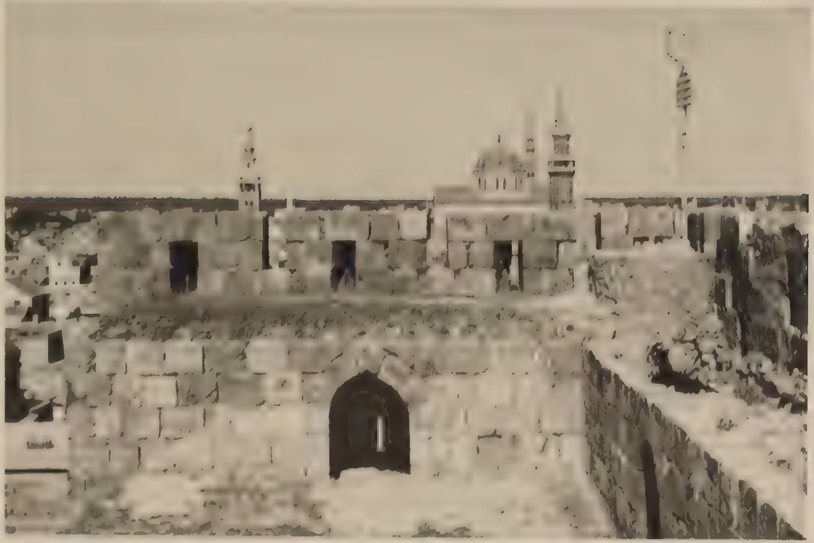
The wall is 4 ft. 7 in. 1·40 m. thick; there is no vault and never appears to have been one. This story is covered in a modern roof, and whatever parapet there may have been has vanished, though it is by no means improbable that there was a regular wall-walk and battlements, the wall being quite thick enough to carry them, by English standards at any rate.

The whole building has a late Mamluk appearance, and I would not dare to quarrel with Sauvaget's attribution of it to the fifteenth century.[1] More precise dating seems impossible.

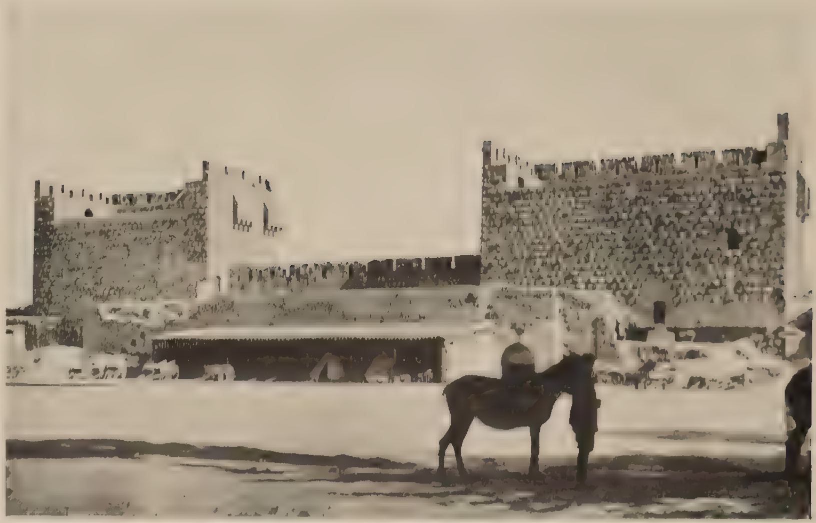
As to its employment, it clearly controlled the water in the ditches of the citadel and in the Banias itself, while its numerous loopholes and bold projection enabled it to enfilade the whole north front of the citadel, to act, in fact, as a caponier in the defence of the fortress.

---

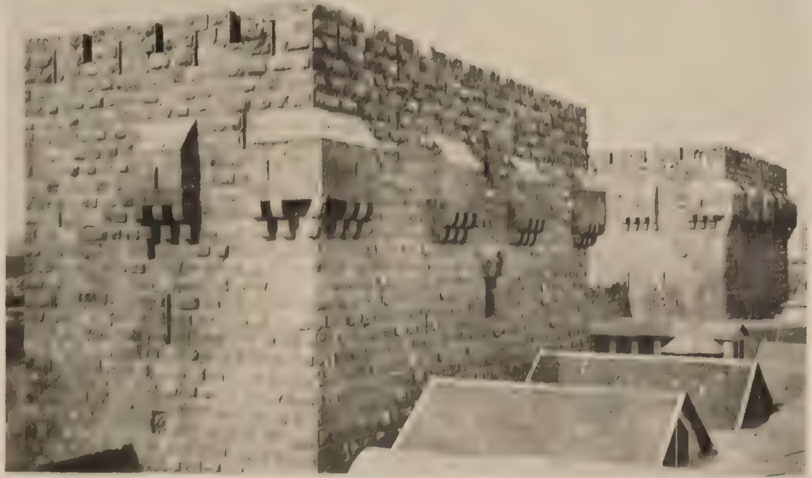
[1] *Mon. hist. de Damas*, p. 42.



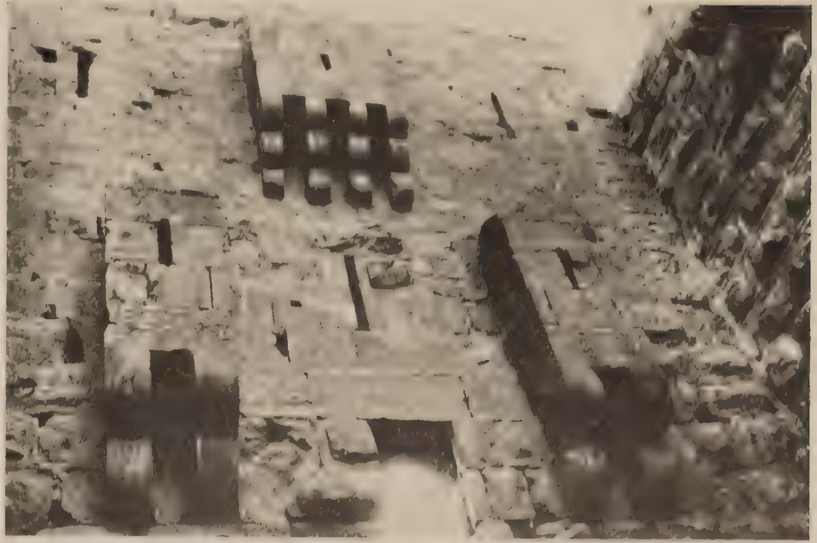
a. Tower 4. Parapet, looking east



b. Towers 4 and 3 from the north

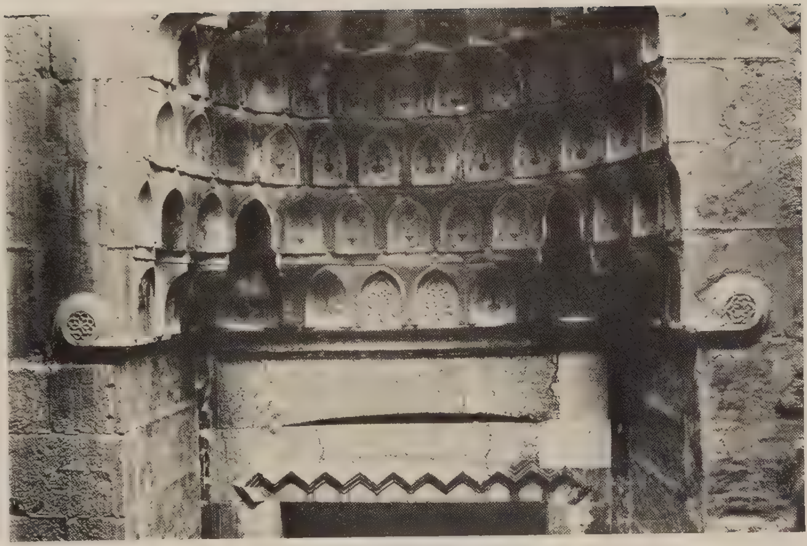


c. Towers 3 and 4 from the south-west

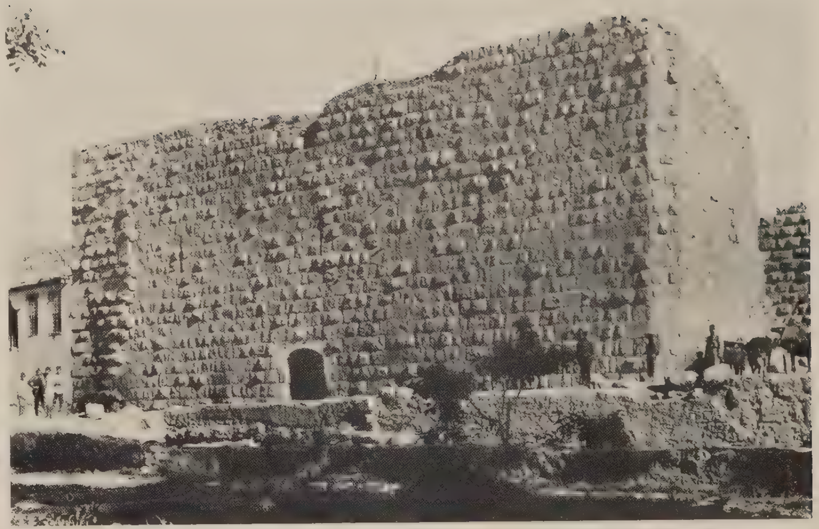


d. Curtain 6 7, front

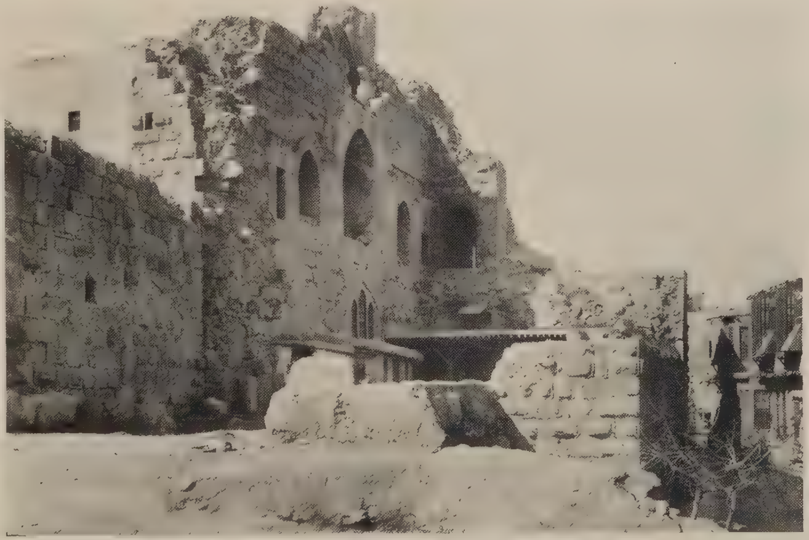
Published by the Society of Antiquaries of London, 1951



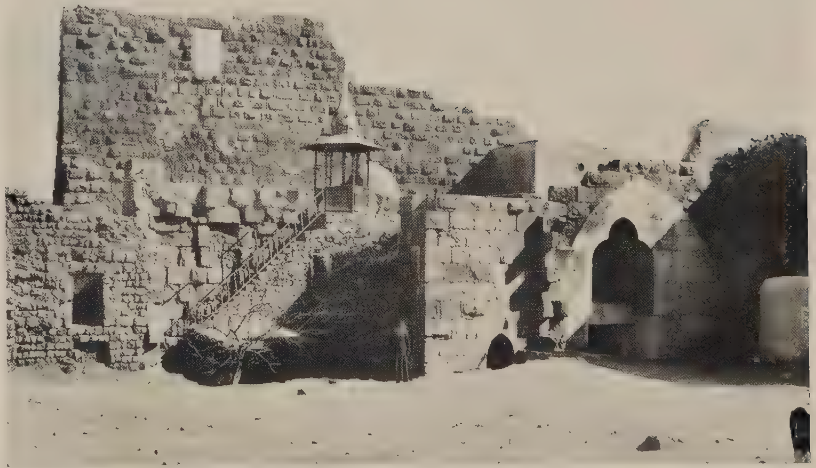
a. The East Gate



b. Tower 9 from the north

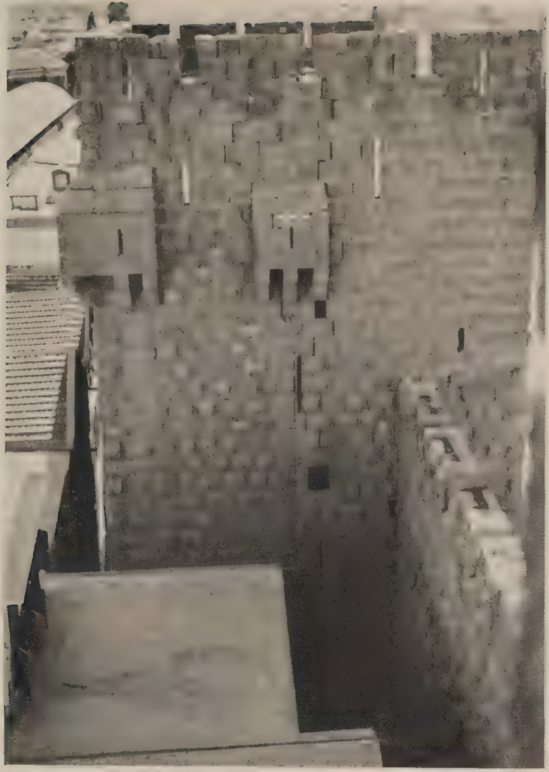


c. Tower 10 (the North Gate), from the east

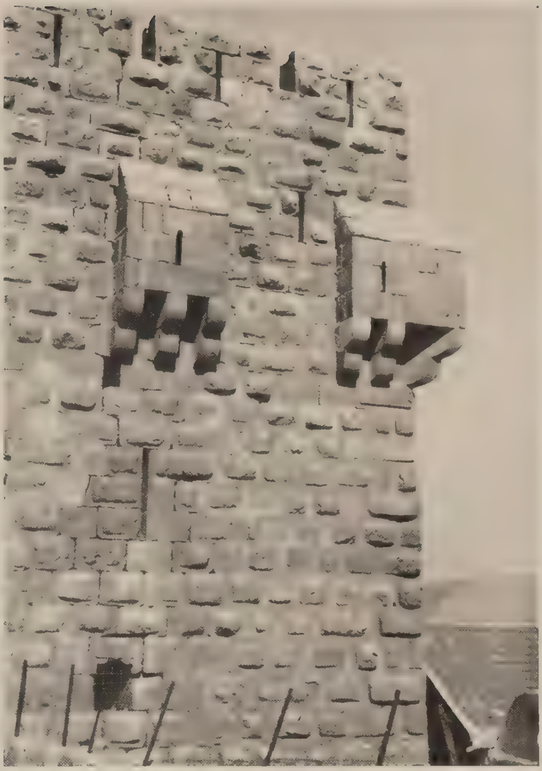


d. The North Gate from the rear, state in 1914. The wall of Tower 14 is in the foreground, with steps running across it

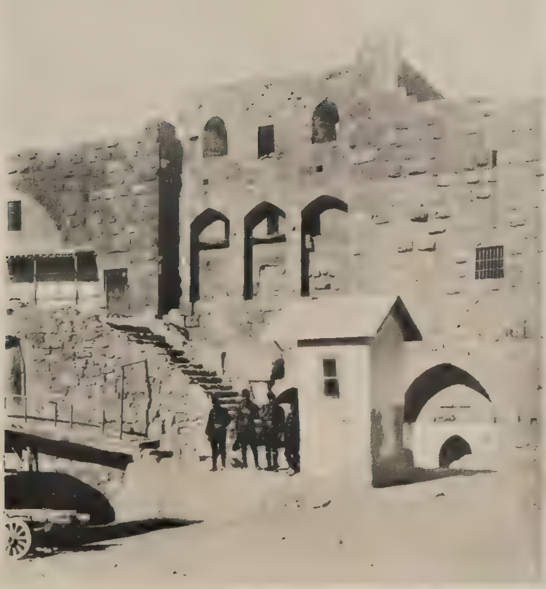
Published by the Society of Antiquaries of London, 1951



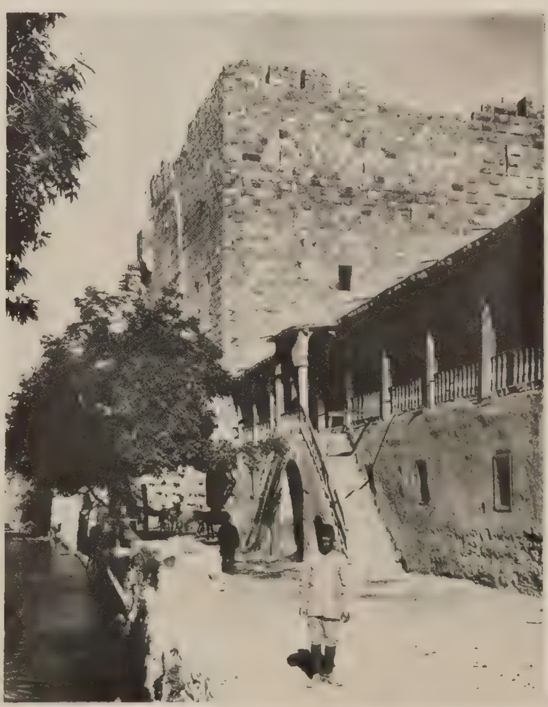
a. Tower 3 from the east



b. West face of Tower 3, showing brattices

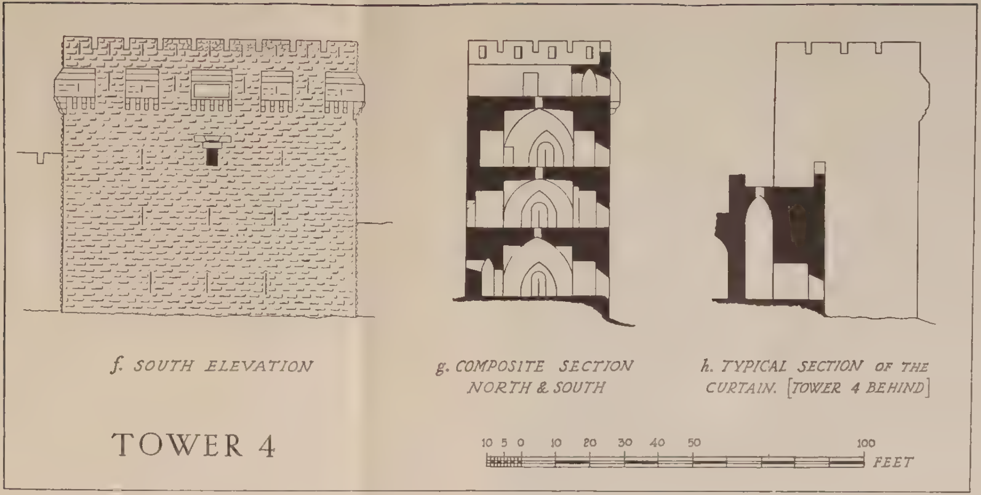


c. Towers 7 and 6 and curtain between them, from the west



d. Tower 8 from the north-west; condition in 1914

Published by the Society of Antiquaries of London, 1951

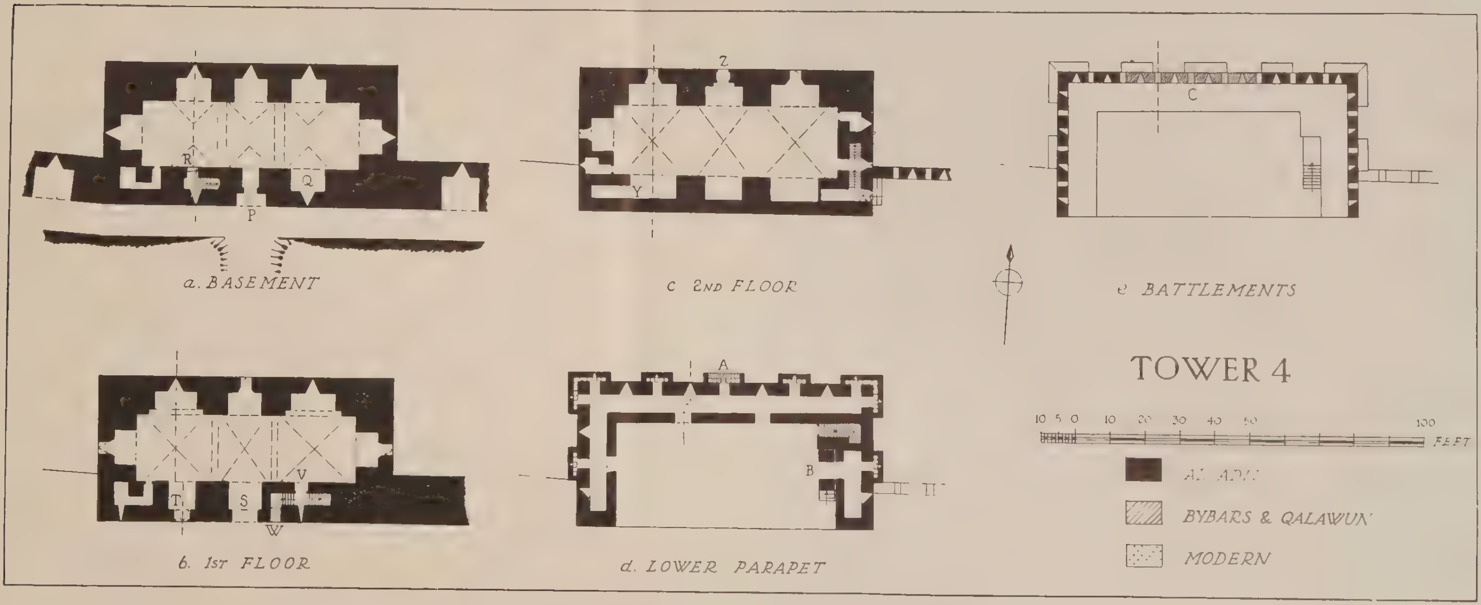


TOWER 4
10 5 0 10 20 30 40 50 100
FEET

f. SOUTH ELEVATION

g. COMPOSITE SECTION NORTH & SOUTH

h. TYPICAL SECTION OF THE CURTAIN. [TOWER 4 BEHIND]



Z
C
R
Q
P
Y
A
B
T
S
V
W
TOWER 4
10 5 0 10 20 30 40 50 100
FEET
■ AL ADIL
▨ BYBARS & QALAWUN
⬚ MODERN

a. BASEMENT

c 2ND FLOOR

e BATTLEMENTS

b. 1ST FLOOR

d. LOWER PARAPET

Published by the Society of Antiquaries of London, 1951

The Kaʿba in A.D. 608

By PROFESSOR K. A. C. CRESWELL, F.B.A., F.S.A.

THE sanctuary at Mekka, in the time of Muhammad, merely consisted of a small roofless enclosure formed by four walls a little higher than a man, according to Ibn Hishām, or about 9 cubits (say 4·50 m.) according to Azraqī, built of rough stone laid dry.[1] It was oblong in shape, the following being the measurements of its sides: NE. 32 cubits, NW. 22, SW. 31, SE. 20,[2] proportions approximately 3:2. Within this enclosure was the sacred well of Zemzem.

At the four corners were embedded four stones which, on account of their special form and mysterious origin, perhaps meteoric, had attracted the veneration of the Arabs. In the time of Muhammad there were many other stones also, which were of more recent origin than the four stones at the corners.[3]

This little sanctuary, known as the Kaʿba, lay at the bottom of a valley surrounded by the houses of Mekka, which came close up to it, and we are expressly told that when ʿUmar wanted to surround it by an open space, large enough to contain the Faithful and bounded by a low wall not higher than a man, he had to demolish many houses.[4]

This is an important point, and disposes of the theory of those who attempt to derive the mosque plan from an erroneous conception of the pre-Islamic sanctuary at Mekka. Lane-Poole, for example, writes: 'The plan of an open court surrounded by colonnades is, as will be readily recognised, simply a survival of the ancient Semitic temple, as we see it in the Phoenician and other ruins, and also in the porticoes [not constructed until 26 H.=A.D. 647/8] surrounding the Kaʿba at Mekka. The Arabs naturally adopted the form most familiar to them, and the best suited to the climate and to the religious rites to be performed.'[5] It was not in this way that the mosque plan was evolved.

Reconstruction of the Kaʿba

The enclosure, being in a bad state, was demolished and reconstructed by the Quraysh when Muhammad was in his thirty-fifth year,[6] i.e. in A.D. 608, or fourteen years before the Hijra, or Migration to Madīna. Caetani, in his monumental *Annali dell' Islam*, regards this construction as legendary, but we shall see that the details given by Azraqī are so circumstantial and self-consistent that there can be no doubt about it.

---

[1] Ibn Hishām, Wüstenfeld's ed., i, p. 122, l. 9; and Azraqī, Wüstenfeld's ed., in *Die Chroniken der Stadt Mekka*, i, p. 106, ll. 10–11.

[2] Azraqī, i, p. 31, ll. 5–10.

[3] Caetani, *Annali dell' Islam*, i, 91–3 and 174; and Lammens, *Le culte des bétyles*, *B.I.F.A.O.*, xvii, 72–8. The 'Black Stone' had not yet become the most venerated, as Lammens points out, if one may judge by the silence of the contemporary poets.

[4] Balādhurī, *Futūḥ al-Buldān*, p. 46; Hitti's transl., pp. 73–4; Moṭahhar ibn Ṭāhir al-Maqdisī, Huart's ed. iv, 84; transl., p. 79; and Caetani, *op. cit.* i, 178.

[5] Lane-Poole, *Art of the Saracens in Egypt*, p. 52. See also Diez, *Die Kunst der islamischen Völker*, p. 8.

[6] Ṭabarī, Prima Series, p. 1130, ll. 14–15; other versions put it in his twenty-fifth or fortieth year.

At this time a Greek (*Rūmī*) merchant ship was wrecked at Shuʿaibīya (the port of Mekka before Jidda). The Quraysh took the wood and employed a Greek (*Rūmī*) carpenter and builder named Bāqūm, who was on board, to help them in rebuilding the Kaʿba.[1] Ibn Hishām calls him a Copt and says that he was in Mekka at the time.[2] He does not give his name.

Azraqī says that the new Kaʿba was built with a course of stone alternating with a course of wood up to the roof,[3] there being sixteen courses of stone and fifteen of wood,[4] that is to say there were thirty-one courses beginning and ending with a course of stone. Azraqī's statement that Bāqūm was a builder (*bannāʾ*) and carpenter (*najjār*) now becomes understandable—to erect such a structure a man would need to be both. The door, which had previously been at ground level was placed with its sill four cubits and a span from the ground.[5] Balādhurī gives the reason for this, saying that during the rebuilding a certain Abū Ḥudhaifa ibn al-Mughīra said: 'Raise, people, the door of the Kaʿba so that no one may enter without a ladder. Then would no man whom ye do not want to enter be able to do so. In case some one ye hate should come, ye may throw him down.'[6] Bāqūm asked what sort of roof they wanted and they replied a flat one.[7] This roof rested on six pillars (*sawārī*, pl. of *sāriya*), arranged in two rows of three each,[8] and the height of the new structure was 18 cubits instead of 9.[9] There was a wooden staircase to the roof in the Rukn ash-Shāmī, i.e. the north corner.[10] As there was a staircase to the roof I assume that the latter had a parapet (fig. 1).[11]

The Internal Decoration

The most remarkable part of Azraqī's account is his description of the decoration of the interior. He says that they decorated the ceiling, the walls, and the columns. On the latter they made pictures (*ṣuwar*) of the Prophets, trees, and angels. There was a picture of Ibrāhīm as an old man practising divination by means of arrows, a picture of ʿĪsā ibn Maryam (i.e. Christ), and his mother and angels (p. 111, l. 38): 'The day of the conquest of Mekka, the Prophet entered the Kaʿba and sent for al-Faḍl ibn ʿAbbās—who brought water from Zemzem, and he ordered him to bring a rag soaked in water and efface the pictures (*ṣuwar*), which he did. They say that the Prophet put his two hands on the picture of ʿĪsā ibn Maryam and His Mother and said: “Efface all these pictures except these under my hands.” He then raised his hands from above ʿĪsā and His Mother. He looked at Ibrāhīm and said: “May God curse the man who represented him practising divination with arrows. What could Ibrāhīm be doing with arrows?”’[1] He goes on to say: ‘Sulaymān ibn Mūsā ash-Shāmī asked ʿAṭā’ ibn Abī Rabāḥ: “Have you seen in the Temple the representation (*timthāl*) of Mary and Jesus?”. . . “I have seen them, they were painted; Mary held Jesus seated on her knees. . . . The painting of Jesus and Mary was on the column nearest the door. . . . It disappeared during the fire at the time of Ibn az-Zubayr. . . . I believe that they existed in the time of the Prophet.” . . . “As you have seen the pictures in the Temple, who then effaced them?” . . .[2] “I know nothing about that; of all the paintings which the Prophet had effaced I have only seen the traces of two.” ʿAṭā’ pointed to the column on which these paintings had been.’ Azraqī then cites another Traditionist: ‘I have seen in the interior of the Kaʿba, before it was destroyed, the picture of Jesus and His Mother. . . . The Prophet gave the following order: “Shaiba, efface all the pictures except those hidden under my hand,” and he raised his hand from above Jesus and his Mother.’[2]

---

[1] Ibn Saʿd, *Ṭabaqāt*, Sachau's ed., i, p. 93, l. 16; Azraqī, i, p. 104, l. 19–p. 105, l. 1; p. 107, ll. 6–12; and p. 114, ll. 9–13. Azraqī's account is so remarkable that I think it advisable to mention the fact that he is the oldest existing historian of Mekka (d. A.D. 858). His history is mainly based on information collected by his grandfather at the end of the eighth century.

[2] *Loc. cit.*, i, p. 122, ll. 12–15; repeated verbatim by Ṭabarī, Prima Series, p. 1135, ll. 10–12.

[3] *Loc. cit.*, i, p. 109, ll. 16–17, and p. 110, ll. 12–13 and 18–20.

[4] *Loc. cit.*, i, p. 110, ll. 19–20. Azraqī mentions this remarkable feature once more, when speaking of the burning of the Kaʿba on 3 Rabīʿ I, 63 H. (20th Oct. 683), saying that it was built with a course of teak (*sāj*) and a course of stone alternately up to the top; i, p. 140, ll. 1–8.

[5] *Loc. cit.*, i, p. 110, ll. 11–12.

[6] *Futūḥ al-Buldān*, p. 46, ll. 14–16; Hitti's transl., p. 74.

[7] *Loc. cit.*, i, p. 110, ll. 13–14.

[8] Ibn Saʿd, i, p. 94, ll. 24–5; and Azraqī, i, p. 110, ll. 15–16, and p. 112, ll. 1–2.

[9] Ibn Hishām, i, p. 126, ll. 9–10; and Azraqī, i, p. 110, ll. 16–18; also p. 115, ll. 17–19.

[10] Azraqī, i, p. 110, ll. 20–21. It did not take its present cubic form until it was rebuilt by Ibn az-Zubayr in 64–5 H. (684) when its height was increased to 27 cubits.

[11] It will be noted that my reconstruction of the Kaʿba does not show the courses of wood exposed, as in Abyssinian churches, but on the contrary plastered over. This is because it would appear from Azraqī's account of the burning of the Kaʿba in 63 H. (683) that it was only then that people discovered, apparently with surprise, that its walls were partly constructed of wood.

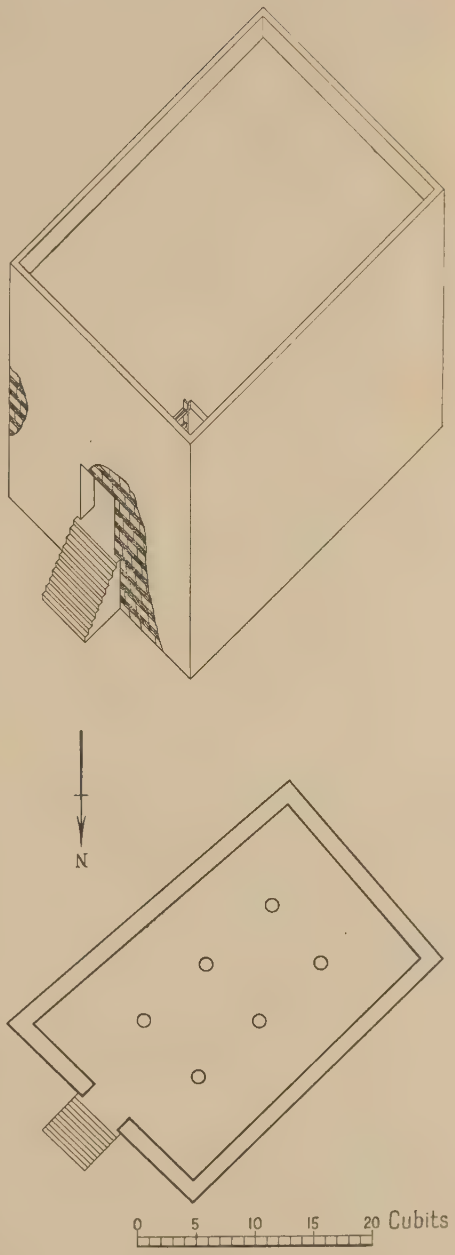


FIG. 1. The Kaʿba, as rebuilt in A.D. 608.

Architectural Origins

Where can this remarkable style of building, with alternate courses of stone and wood, have come from? Certainly not from a country like Arabia, where wood is scarce; it can only have been evolved and practised in a country where wood was plentiful, and it is precisely in such a country—Abyssinia—where many examples of this extraordinary technique are to be found, e.g. the Churches of Debra Damo, Debra Libanos, Imrahanna Kristos (Imraha), and Asmara. The oldest of these, Debra Damo (pl. XXII, *b*), was first studied by the

---

[1] Practising divination by means of arrows is strictly forbidden in the Qur’ān.

[2] *Loc. cit.*, i, p. 110, last line–p. 112, l. 15. Bukhārī also mentions the effacement of the pictures in the Kaʿba, Bk. XXV, c. 54, LX, c. 8, and LXIV, c. 48; transl. of Houdas and Marçais, i, pp. 518–19; ii, p. 74; and iii, pp. 181–2; also Balādhurī, but without giving any details; p. 40, ll. 17–18; Hitti’s transl., p. 66. Aḥmad ibn Ḥanbal mentions the pictures of Ibrāhīm and Maryam; *Musnad* (Cairo, 1313 H.), i, p. 277, ll. 23–6; p. 334, ll. 18–22; and p. 365, pp. 22–4.

Deutsche Aksum-Expedition in 1906;[1] it has been studied again, quite recently, by Buxton, who was allowed to enter the interior of the church, a privilege not permitted in 1906,[2] when the Germans were only allowed to see the narthex. This is how Buxton describes the construction of the walls:

> The walls, with their door- and window-frames, are constructed in a most characteristic fashion, well shown in fig. 2, which I have borrowed from Krencker. Except at the corners, where squared stone is used, the walls are built of small rough stones (mostly tile-like fragments of the local rock, laid flat) set in an earthy mortar. At intervals horizontal timbers are let into the walls, one on the outer and one on the inner face of the wall at each level. These are crossed by numerous short, round logs which pass through the wall, projecting freely outside, and sometimes inside too. They are slotted below so as to fit down over the horizontal beams which they clamp securely together, so strengthening the whole fabric of the wall. I propose to call these short logs 'binders'. Their rounded, projecting ends are sometimes called by the Ethiopians 'monkey-heads'.[3]

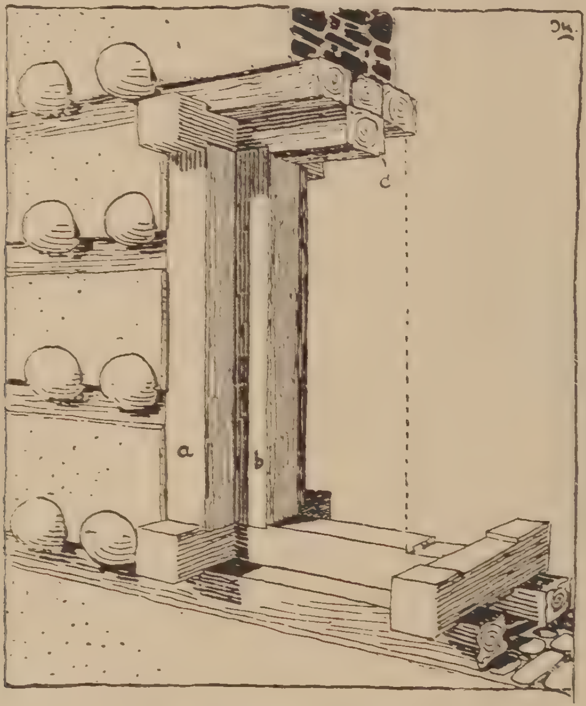


FIG. 2. Window and door construction (from Krencker, *op. cit.*).

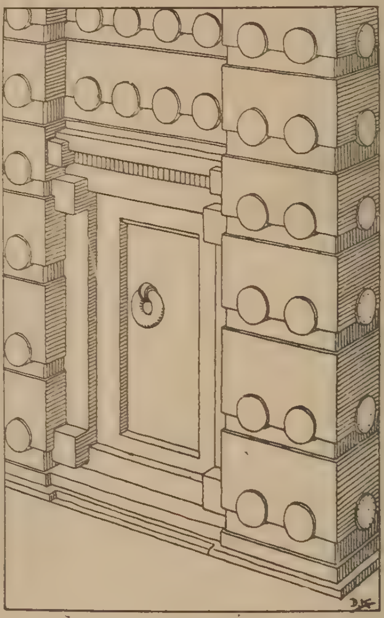


FIG. 3. Base of Aksum stela (from Krencker, *op. cit.*).

In a later church—Imrahanna Kristos—the transverse beams and their bosses, or 'monkey-heads', are omitted (pl. XXII, *a* and *c*).

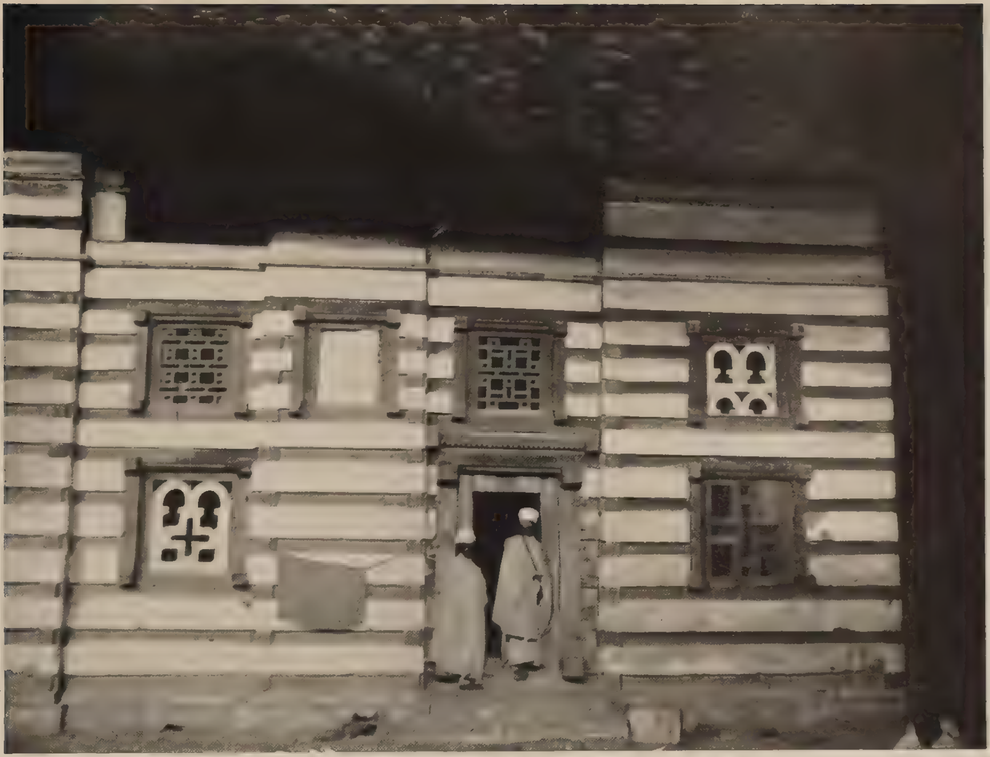
As for the date of Debra Damo, Krencker believes that the latest possible date is the eleventh century, with which Buxton agrees, inclining to the ninth or tenth century

---

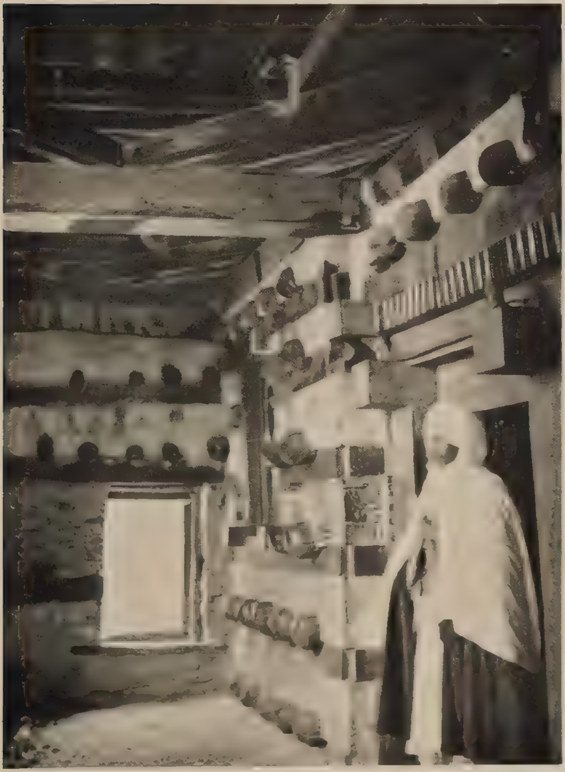
[1] D. Krencker, *Ältere Denkmäler Nordabessiniens* (*Deutsche Aksum-Expedition*, Band II), pp. 168–94.

[2] 'The Christian Antiquities of Northern Ethiopia', *Archaeologia*, xcii, pp. 6–13 and pls. I–II.

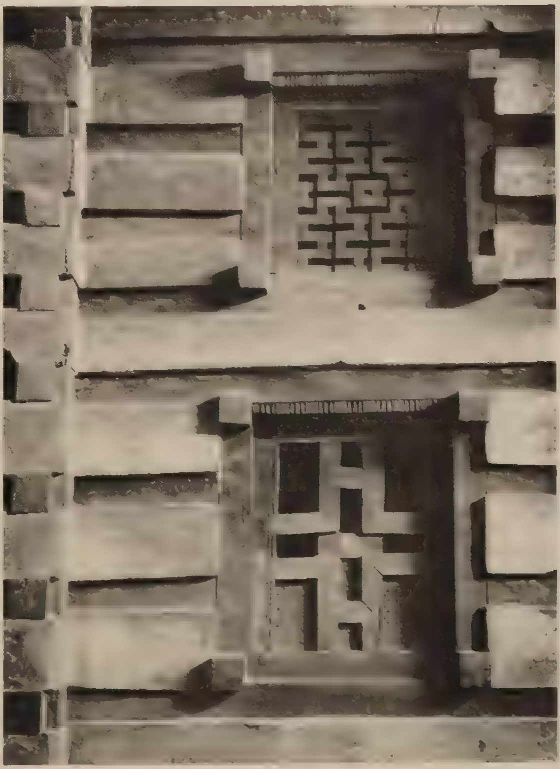
[3] *Loc. cit.*, p. 8.



a. Imrahanna Kristos (Imraha). North façade of church in cave. (From Buxton)



b. Debra Damo. Porch (original west front on right) (From Buxton)



c. Imraha. Windows of east end. (From Buxton)

Published by the Society of Antiquaries of London, 1951

for the main fabric, and suggests the twelfth century for Imrahanna Kristos. This is too late for our purpose, but fortunately it can be proved that this technique was known and employed in Abyssinia at a much earlier date, that is to say at the time when the great monolithic stelae of Aksum were carved. These stelae are of oblong cross-section and are carved to resemble houses of many stories,[1] and the technique just described is clearly counterfeited on the stone (fig. 3). These stelae, of which the largest, now fallen and broken in pieces, measured 33·30 m. in height,[2] tapered upwards and ended in a crescent-shape which was the symbol of Maḥrem, the Abyssinian god of war. As King ʿĒzānā, 'der Konstantin Abessiniens' as Littmann calls him, was converted to Christianity in the fourth century and made it the state religion, it follows that the latest possible date for these pagan stelae is the fourth century. We are therefore fully justified in asserting that the peculiar building technique we are studying was in use in Abyssinia at least as early as the fourth century.

What Relations were there between Abyssinia and Arabia before Islam?

In the first place it seems clear, in spite of the confusion in the Greek and Arabic sources and the large admixture of legend, that Abyssinian armies invaded southern Arabia on four occasions,[3] as under:

1. In the first century A.D. they conquered part of the western Yemen.
2. In the earlier part of the third century they invaded the coastal area to the north of the Yemen.
3. At the end of the third century the Abyssinian King Afilas invaded southern Arabia,[4] which was held until some date between A.D. 341 and 346.
4. Another invasion began in 525 and lasted until the Persian invasion of 570. During this period the Abyssinian commander Abraha marched on Mekka. His name appears in the inscription on the famous dam of Ma'rib, in which he calls himself 'Vassal Prince of the Abyssinian King, King of Saba', Raydān, Ḥadramawt, Yamāma and the Arabs of the uplands and the coast'.[5] In addition to this Azraqī says that after the destruction of the Kaʿba by fire in 63 H. (683) the remains were demolished by Abyssinian slaves.[6]
5. In the fifth year of Muhammad's preaching no less than eighty-three families of converts took refuge in Abyssinia from the hostility of the unbelieving Mekkans.

And what is important for our subject, the Abyssinians left at least one specimen of their architecture, for Abraha built a church at Ṣanʿā' which was famous in the early days of Islam,[7] and from which Masʿūdī says that glass mosaic (*fusaifisā*) and three marble columns were taken to adorn the Kaʿba on its rebuilding by Ibn az-Zubayr in 64–5 H. (684).[1] There can be no possible doubt that this church was built in Abyssinian style for Azraqī, in his description of this church, expressly says that between every two courses of stone was a layer of *ṣāsam* wood with round heads the thickness of a man's chest projecting from the surface[2]—'monkey-heads' in fact.

---

[1] The largest showed thirteen stories, the tallest still standing (70 ft.) has nine.

[2] It was therefore longer than any Egyptian obelisk, the tallest of which, that of Queen Hatasu at Karnak, measures 108 ft. 10 in., or 33·17 m.

[3] Conti Rossini, *Expéditions et possessions des Ḥabašāt en Arabie*, *Journal Asiatique*, 11me série, xviii, 35–6.

[4] This invasion is attested by a long Greek inscription at Adulis, seen and copied by Cosmas Indicopleustes a little before A.D. 525; see Littmann, in the *Deutsche Aksum-Expedition*, i, 42–4; and Conti Rossini. *loc. cit.*, pp. 18–25.

[5] See Glaser (Inscr. No. 618), *Mitteilungen der Vordarasiatischen Gesellschaft*, 1897, No. 6, p. 42.

[6] *Loc. cit.*, i, p. 141, ll. 20–3.

[7] For this famous church, see Azraqī, i, 88–9 (fullest description); Ṭabarī, Prima Series, p. 935; and Abū Ṣāliḥ, *Churches and Monasteries of Egypt*, Evetts' text, p. 138; transl., pp. 300–1; and Yāqūt.

The Nationality of the Architect

And now we come to the final question: Was the architect, Bāqūm, a Copt named Pachōm (Pachomius) as one is apt to conclude, or can he have been an Abyssinian? I therefore consulted Dr. Littmann as anyone studying Abyssinian antiquities naturally would do, and I did not turn to him in vain, for he seems to have settled this question. He has pointed out to me that the name Pachōm would not, strictly speaking, be transliterated into Arabic as Bāqūm for 'the sound *kh* (or in Sahidic *ẖ*) should not be rendered by the Arabic *q*, and Baqōm for Pakhōm would be unusual and against the rule', and he comes to the conclusion 'that Bāqūm is an abbreviation of *ʿEnbāqōm*, the Abyssinian form of *Habakkuk*. It is known to be a name of Abyssinian Christians. That would make your important discovery even more likely.'[3]

Finally, I maintain that the Abyssinian style of the architecture of the Kaʿba of A.D. 608, the Christian paintings that decorated it, and the Abyssinian name of the architect form such a self-consistent whole that we are fully justified in rejecting Caetani's view that this rebuilding is a legend.

In closing I offer my best thanks to Dr. Enno Littmann and Monsieur G. Wiet for the assistance that I have received from them.

---

[1] *Tanbīh*, i, p. 146, l. 18–p. 147, l. 2.

[2] *Loc. cit.*, i, p. 89, ll. 18–19.

[3] Letters of 5th July and 3rd August 1949.

A Stone Industry from Morar, Inverness-shire; Its Obanian (Mesolithic) and Later Affinities

By A. D. LACAILLE, Esq., F.S.A.

[*Read 20th January 1949*]

INTRODUCTION

IN 1937 Dr. W. A. Munro, H.M. Chief Inspector of Schools, Edinburgh, sent me a large number of stone artifacts which he and his family had collected in Morar, Inverness-shire, whence nothing of the kind had ever been reported. Recognizing from his specimens and description of the site that a peculiar interest attached to the relics, I determined to visit the place. Since this lies in what during the war was a strictly prohibited area, my desire was not realized until August 1946. The examination and additional finds made then showed the need for extending inquiries, by surveying much ground and by reviewing evidences of coastal settlement obtained previously in the extreme west, before the assemblage from Morar could be assessed. The results of these researches are now laid before the Society.

THE ROUGH BOUNDS

Morar, with Ardnamurchan, Moidart, Arisaig, and Knoydart, is comprised in *na-Garbh-Chriochan*, an expanse some 35 miles long and 20 wide, between Loch Sunart in the south and Loch Hourn in the north (map, fig. 1). The Gaelic term, meaning the Rough Bounds,[1] is apt for this thinly populated and rugged area in the West Highlands. The biographer of St. Columba was evidently acquainted with it. Calling it *aspera et saxosa*[2]—rough and stony—he well describes a region composed of the most ancient rocks[3] and abounding in the memorials of late deglaciation.

The mountains which dominate the Rough Bounds constitute the western extension of the ancient table-land of the Highlands. Stretching between the Great Fault of Glen More and the Moine Overthrust, in chains alined east and west, they come down to the coast in jumbles of irregular crags and spurs. All in the mainland mass are Pre-Cambrian, consisting of Moine schists except for a strip of intrusive Archaean igneous rocks, mostly Lewisian gneisses, through the western part of Morar and northward along the Knoydart coast. A complex of Mesozoic or Secondary sediments and Cainozoic or Tertiary lavas and intrusions occupies the western part of Ardnamurchan.

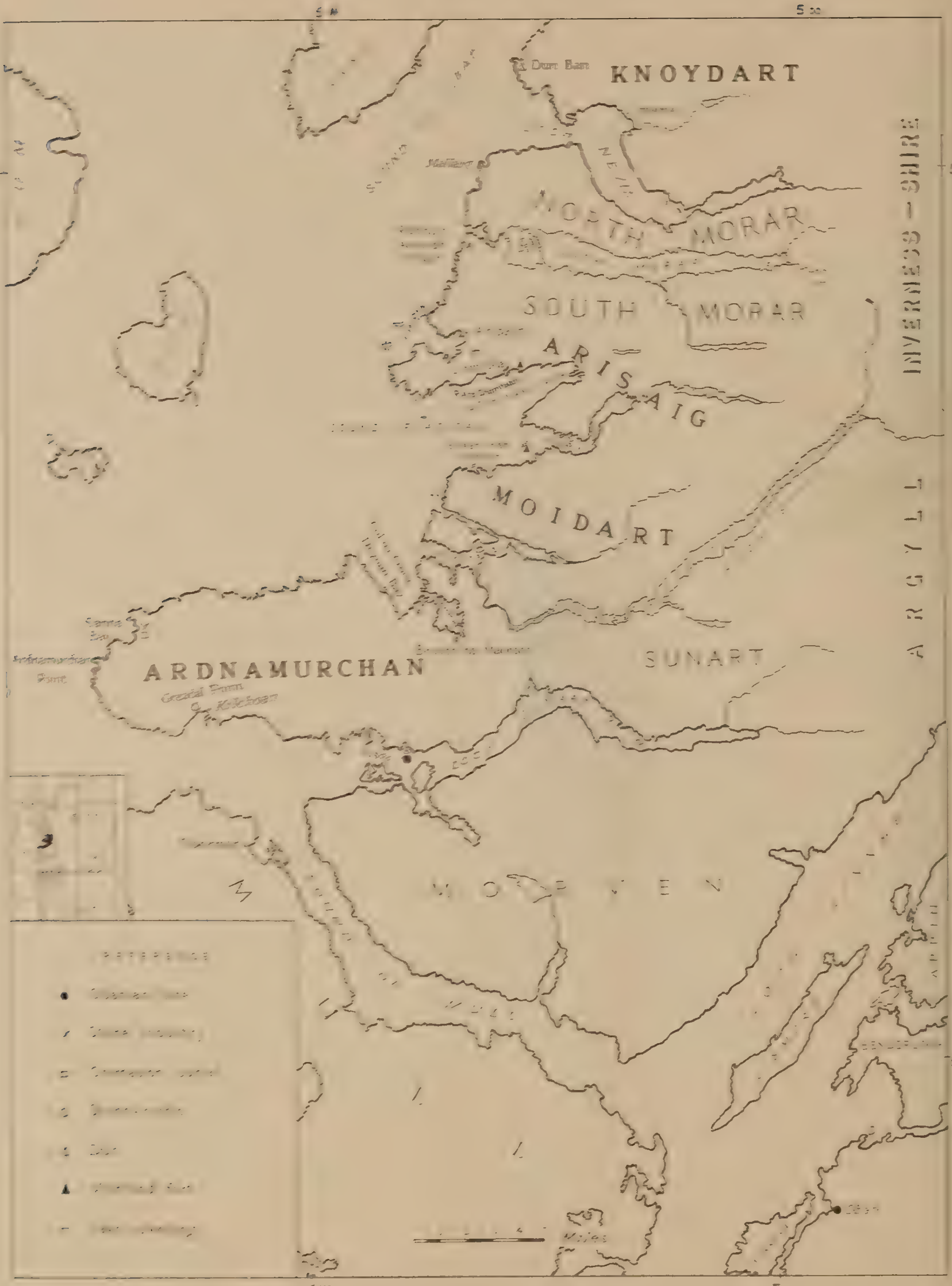
Communications by land are few in this country which is ravined by deep glens, intersected by freshwater lochs, the longest Shiel and Morar, notched by innumerable inlets, and is indented along the coast by rock-girt bays and skerry-guarded coves with shores of shining silver sands. Fjords, penetrating far into the interior, contribute to the shaping of the land into peninsulas, the largest, Ardnamurchan, terminating in the most westerly promontory of our mainland.

---

[1] Rev. Chas. Macdonald, *Moidart; or Among the Clanranalds*, Oban, 1888, p. 1.

[2] Adamnan, *Vita S. Columbae*, lib. 1, c. 12.

[3] Alfred Harker, *The West Highlands and the Hebrides*, Cambridge, 1941, map 1, and pp. 1, 57–9.



5 W
5 30
57 N
Dun Ban
KNOYDART
Mallaig
NORTH MORAR
SOUTH MORAR
ARISAIG
INVERNESS-SHIRE
MOIDART
ARGYLL
Sanna Bay
Ardnamurchan Point
ARDNAMURCHAN
Greadal Fhinn
Kilchoan
SUNART
MORVEN
Miles
56 30
6 W
5 30

FIG. 1. Map of the Rough Bounds, showing the prehistoric sites.

Records of the high-level arctic sea, which was contemporary with the last, that is the Valley, District, or Moraine Glaciation, are not so clear in the Rough Bounds as on the south-eastern seaboard of the Isle of Skye opposite. Notwithstanding, deposits prove that glaciers streamed into this Late-Glacial sea as the land recovered by stages after the maximum of submergence denoted by the so-called 100-ft. beach. That this process of recovery continued until the coastal grounds were extended is attested by peat and vestiges of trees, locally exposed at low tide along the coast.[1] These remains of the Boreal climatic phase (*c.* 6800–5000 B.C.), which marked the beginning of Post-Glacial time, were drowned when the sea regained its mastery and invaded the land during the succeeding Atlantic phase.

In the Rough Bounds this early Post-Glacial marine transgression is recorded by a raised beach standing about 30 ft. above O.D. It forms part of the most conspicuous feature of the Scottish coasts.[2] With its equivalents in the great estuaries it proves that the fringes of most of the country were affected by the submergence and by the subsequent uplift. This process was probably completed by the beginning of the Sub-Boreal climatic phase, *c.* 2500 B.C.

Great importance attaches to this beach and its equivalent carse-clays, particularly of the Forth. Within, or upon their materials, and in caves opening behind, have been found the earliest evidences of man in Scotland. The forming of the raised beach and the deposition of the carse-clays are ascribable mainly to the warm and damp Atlantic climatic phase (between 5000 and 2500 B.C.). This has been determined by the pollen-analysis of the underlying and overlying peats,[3] the lower being of Boreal, and the upper of Sub-Boreal age, in turn locally capped by peat of Sub-Atlantic age.

---

[1] Jas. Geikie, *The Great Ice Age and its Relation to the Antiquity of Man*, London, 1894, pp. 289–94.

[2] The feature is commonly called the 25-ft. beach. This term is a misnomer, because the elevation is by no means constant. When this was recognized and explained the designation *Early Neolithic* was suggested, since it was believed that the relics of human industry associated with the beach were referable to that period. A later proposal to call it the *Mesolithic* beach is based on the surer foundation of present archaeological knowledge. Recently it has been advanced that a more appropriate term would be *Litorina Beach* after the correlative counterpart formation in the Baltic area, since in both the periwinkle *Litorina litorea* Linn. occurs as the characteristic fossil. The present author thinks it better not to confuse a British coastal feature with the memorial of a submergence in the Baltic trough. He therefore designates the formation the *Early Post-Glacial* raised beach.

The beach attains about 50 ft. at Gartmore in the upper Forth valley, in the basin of the Tay above Perth and below Crieff in Strathearn. In the west it stands about 40 ft. above present high-water mark between Loch Linnhe and the Firth of Clyde. Outward it decreases to present sea-level in Caithness and the Hebrides, in Co. Durham and Lancashire in England, in North Wales, south of Dublin and Co. Sligo in Ireland. A curve joining these points and forming the zero-isobase approximates to that denoting the supposed maximum limits of the Late-Glacial sea. Thus, in the British Isles, as in the Baltic region, the recoil subsequent to these two marine invasions was greatest around the ice-centre of Late-Glacial times.

The Early Post-Glacial raised beach represents a period of erosion and deposition probably longer than that of the sea at approximately its present level. Yet it is doubtful if even the whole platform attributed to the Early Post-Glacial sea was everywhere cut by it, though it carved and wasted rocks. The presence of ice-striated rocks upon its surface, as in the Rough Bounds of the West Highlands, suggests that the terrace may be of pre-glacial or inter-glacial age, and that it is a coincidence that the beach rests upon an earlier sea-level.

In Baltic chronology, which cannot yet be applied with certainty to Scotland, the period of the Litorina Sea, the equivalent of the Early Post-Glacial sea of the British Isles, corresponds broadly to the Atlantic climatic phase, between 5000 and 2500 B.C. The maximum transgression in Denmark would have taken place about 4500 B.C. and in Finland about 500 years later.

For details and bibliography the reader is referred to the author's 'The Deglaciation of Scotland and the Forming of Man's Environment' in *Proc. Geol. Assoc.*, vol. lix (1948), pp. 151–71.

[3] G. Erdtman, 'Studies in the Postarctic History of the Forests of Northwestern Europe. I. Investigations in the British Isles', in *Geol. För. Stock. Förh.*, vol. 1 (1928), pp. 123–92.

Vegetation is meagre in the Rough Bounds where the modern plantations are quite distinct from the small self-grown alders, birches, hazels, rowans, ashes, and oaks which clothe the hollows of sheltered glens and the banks of low-lying lochs. And here and there Scots firs, which one always connects intimately with the idea of the Highlands, rear their gnarled trunks in open places associated with the relics of deglaciation. All these trees are living reminders of the vanished Sub-Boreal forests which on the Scottish mainland replaced the far more ancient Boreal woods, destroyed in the sequel by the damp conditions of the Atlantic phase. The order has been revealed macroscopically in exposures in peat-mosses, confirming the sequence noted in sections in the great estuaries and coastal deposits.[1]

Like the mountainous regions farther north,[2] the Rough Bounds would be a refuge area for the last members of the Late-Glacial fauna. Some survive in such species as ptarmigan and large variable hare. With the full development of the Late Boreal-Early Atlantic forests the natural stocking of the Rough Bounds with recent forms would be completed. A characteristic inhabitant of these woods was the red deer, a much larger animal than its degenerate descendant of the present day.

This remote area in the extreme west of the Highland Zone of Britain could not have been reached by man until the Post-Glacial period was well advanced. This appears from the industries to which attention is drawn in this communication. Such prehistoric remains, however, seem not to have been recognized until about thirty years ago. All are associated with features related to the invasions of the Early Post-Glacial sea. Because of the northward trend of migration they are crucial for their bearing upon this study. For Morar could only have been reached by stages along the coast, probably by boat, and generations after communities first gained the southern part of the Rough Bounds.

All told, the records of antiquities are scanty in this region. Among the prehistoric remains noted are stone-settings, cist-burials, duns or forts, and a lake-dwelling (map, fig. 1). The medieval antiquities consist of a few ruins of small castles and chapels, and burial-grounds containing ornate sepulchral monuments. Offering some possibilities for crofting, and therefore having had fixed settlements, mainly on the coastal selvedge, Ardnamurchan boasts more archaeological remains than any of the other districts.

THE ARCHAEOLOGY OF THE SCOTTISH EARLY POST-GLACIAL RAISED BEACH AND ITS EQUIVALENTS

The artifacts from the deposits which register the Early Post-Glacial submergence in Scotland[3] belong to the Mesolithic complex, namely, the Larnian stone industries of the north-east Irish facies, mainly from the Firth of Clyde; the antler tools of Baltic type associated with the remains of whale from the carse-clays of Forth around

---

[1] W. B. Wright, *The Quaternary Ice Age*, London, 1937, pp. 380–2 and 447–8.

[2] For instance, in Assynt, Sutherland. See B. N. Peach and J. Horne, 'The Bone-Cave in the Valley of Allt nan Uamh (Burn of the Caves), near Inchnadamph, Assynt, Sutherlandshire', in *Proc. Roy. Soc. Edin.*, vol. xxxvi (1917), pp. 327–49.

[3] Summarized with bibliography in the author's 'The Stone Age Background of Scotland (with special reference to the South-west and South)', *Trans. Dumfries and Galloway Nat. Hist. and Antiq. Soc.*, vol. xxvi (1948), pp. 9–40.

Stirling; flints from Dundee and Broughty Ferry on the Firth of Tay; and the Obanian bone and stone implements from the mainland and islands in Argyll.

Considered in terms of Baltic chronology,[1] these Mesolithic industries are broadly equatable with periods of Forest Culture: (*a*) The Early Larnian of the emergence with Period II, when the Maglemosean evolved around the Ancylus Lake; (*b*) the Late Larnian of the time of rising sea-level with Period III, during which the Ertebølle developed on the shores of the Litorina Sea. It will be shown in the sequel that the Obanian culture grew at the same time as some advanced phase of the Larnian as the land recovered to approximately its present height relative to the sea.

On the shores of the North Channel a post-Larnian facies arose towards the beginning of Sub-Boreal climatic times. It was coeval therefore with the English Neolithic, but its industries included neither pottery nor the grinding of stone. In Scotland, but not in Ireland, these Epimesolithic industries, from the humus or other deposit overlying the Early Post-Glacial beach, comprise a strong microlithic element of Tardenoisian forms, and in both countries several innovations pointing to a peripheral extension of the Mesolithic heritage manifest in the early western European Neolithic. This is shown by certain typical provincial *tranchets* and their derivatives.

THE EARLY POST-GLACIAL RAISED BEACH IN MORAR

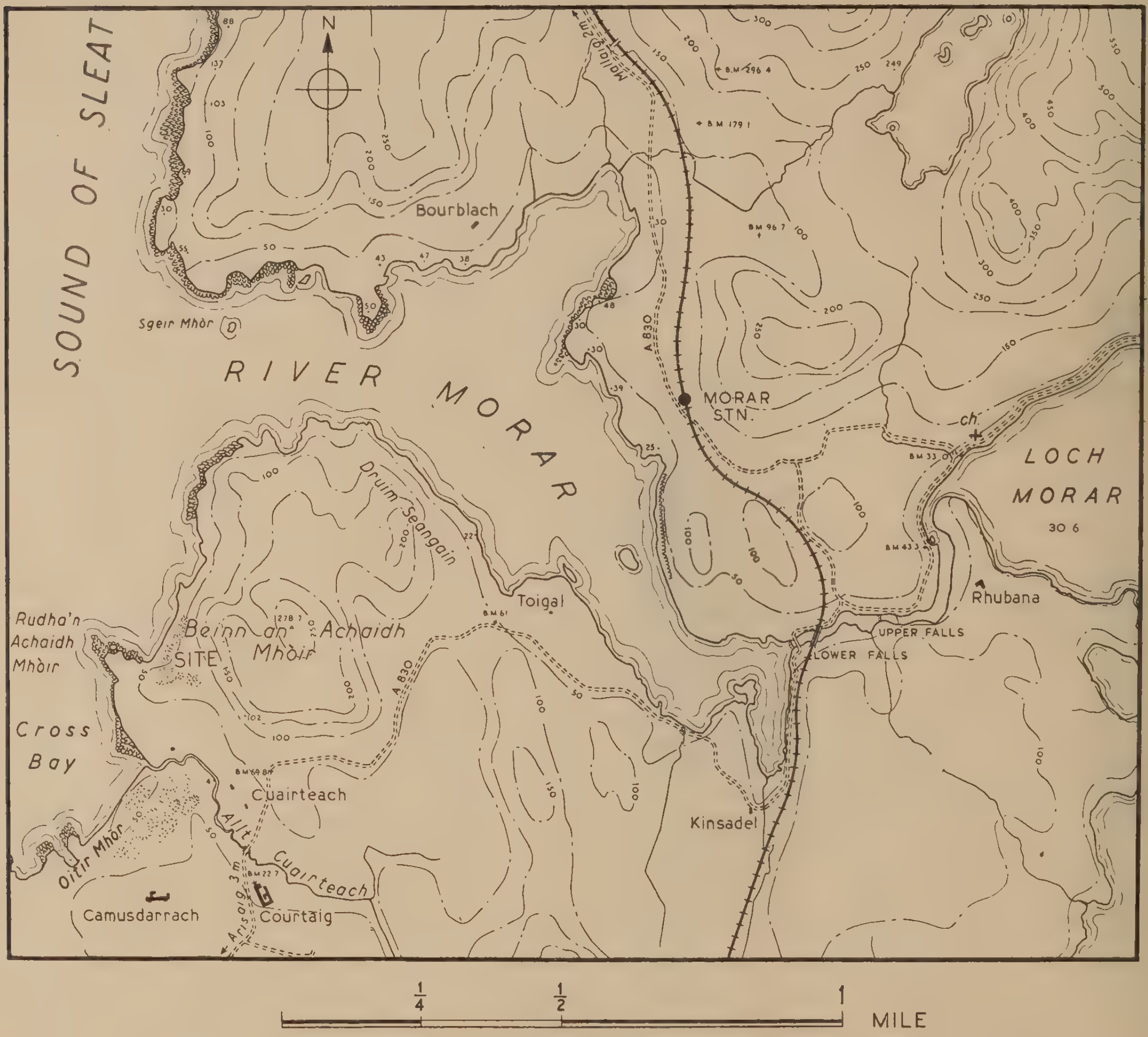
At the head of the Morar estuary the Early Post-Glacial raised beach fronting the cliff is well developed, its top standing 20 to 30 ft. above O.D. (see map of Morar district, fig. 2). On the north side there rise out of the water tangle- and mollusc-covered skerries. The whole scene, with the scarped cliff pierced by small caves and creeks, and studded with outcrops and stacks, perfectly pictures an extinct coast-line. This is, in fact, reproduced much as it was during the Early Post-Glacial marine invasion by the rock-bound one that is to-day washed by the Atlantic Ocean. The characteristic cliff, which commonly backs the beach in the area of its distribution, merges on the south side into the foot-crags of Beinn an Achaidh Mhòir (see pl. XXIII, *a*). The caves on this side, opening on the narrow platform or patches of beach, contain gravel undisturbed since it was laid down during the transgression and regression of the Early Post-Glacial sea.

One mile inland the cliff bars the tide and forms the Lower Falls of the River Morar. Three hundred yards upstream the Upper Falls dash over a broken shelf 10 ft. high. During the Early Post-Glacial submergence the gorge between the two waterfalls would be an extension of the estuary. Six hundred yards above the Upper Falls is Loch Morar, its surface 30·6 ft. above O.D. Proved to 1,077 ft., it is the deepest fresh-water body in the British Isles. The gorge, estuary, and loch would at some time have formed a fjord, but during the reign of the Late-Glacial, or so-called 100-ft. sea, the outlet was probably entirely choked with ice.

The stern features relax south of the estuary, though the coast is broken by sandy bays between rocky promontories (see pl. XXIII, *a*). Behind there stretch hummocked moraines, part of Achad Mhòr, the Big Plain or Field, traversed by a few streams and backed by hills in the east. In places the inroads of the Early Post-Glacial sea are registered by extinct bays, eaten as it were out of the moraines. Stones thus derived have by wave-action added to those dredged from the sea-bed. Hence the ancient shelving gravel-spread platform behind some bays is burdened with great storm-beaches. Their formation is assignable to Late Atlantic times, deposition continuing as the land recovered. A quarter of a mile south of the Morar estuary, and three furlongs west of the Arisaig–Mallaig road (A 830, the 'Road to the Isles' of song), and north of Camusdarrach, a good example occurs behind an *ob* or cove wherein high-water mark stands 8 ft. above O.D., between two capes, the larger Rudha'n Achaidh Mhòir, north of the stream Allt Cuairteach (the Links Burn or Winding Stream) which flows into Cross Bay.

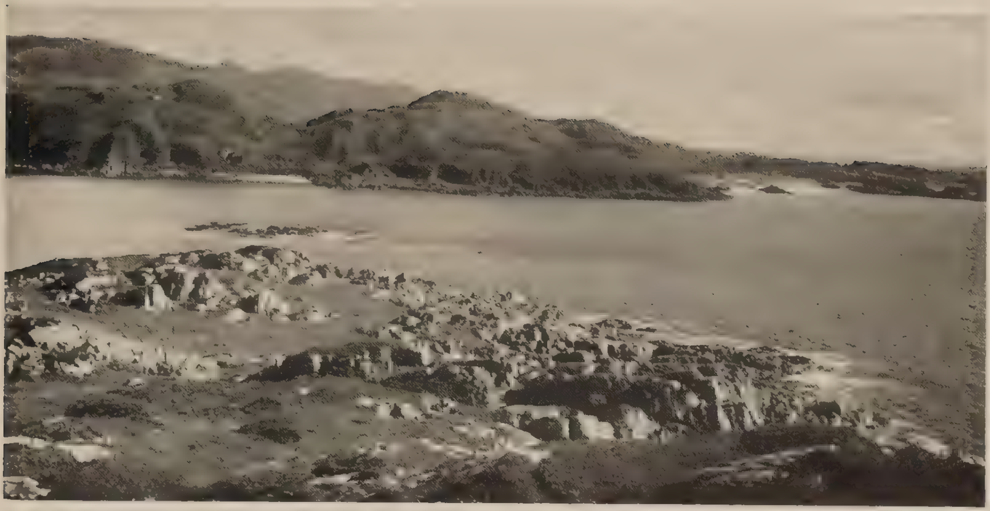
---

[1] J. G. D. Clark, *The Mesolithic Settlement of Northern Europe*, Cambridge, 1936, pp. 220–2.

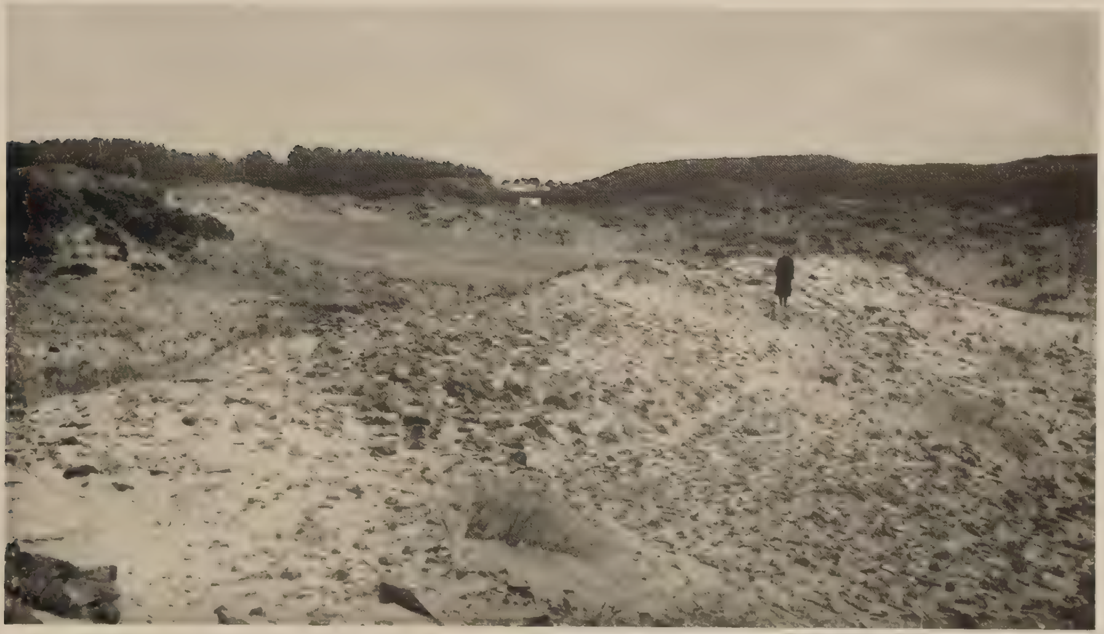

N
SOUND OF SLEAT
Bourblach
Sgeir Mhòr
RIVER MORAR
Mallaig 2m
A 830
MORAR STN.
ch.
LOCH MORAR
North Morar
South Morar
Druim Seangain
Toigal
Rhubana
UPPER FALLS
LOWER FALLS
Rudha'n Achaidh Mhòir
Beinn an Achaidh Mhòir
SITE
Cross Bay
Cuairteach
Allt Cuairteach
Oitir Mhòr
Camusdarrach
Courtaig
Arisaig 3m
Kinsadel
1/4
1/2
1
MILE

(Based on the Ordnance Survey map, by permission of the Controller, H.M. Stationery Office.)

FIG. 2. Map of the Morar district.

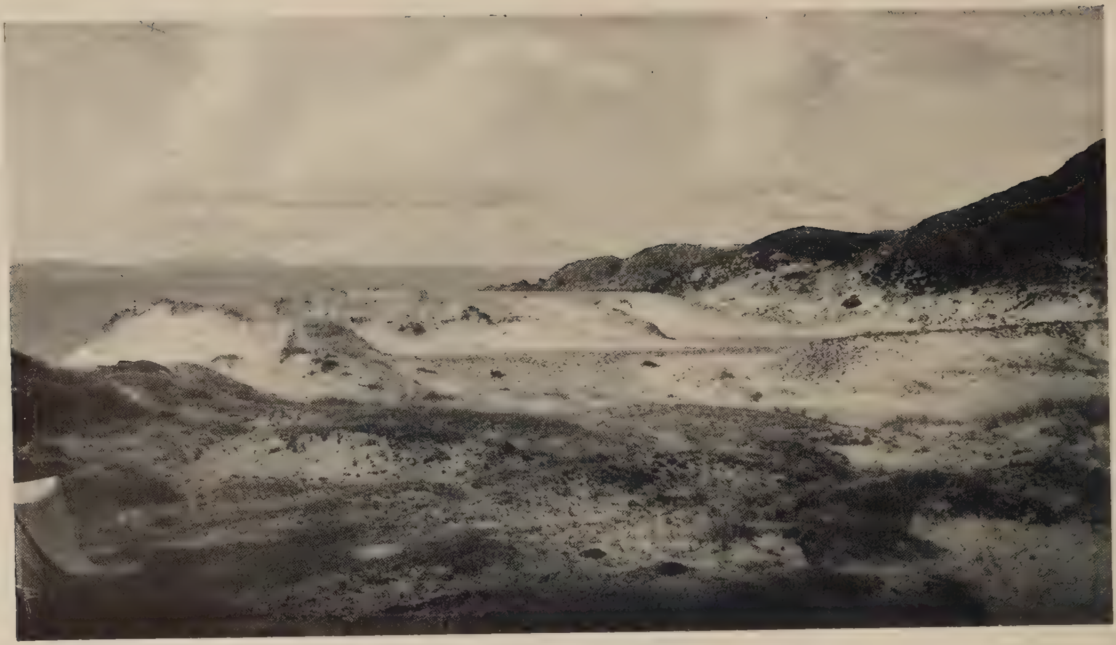


a. The Morar Estuary, Inverness-shire, from the north. On the opposite shore there can be seen the Early Post-Glacial raised beach as a low terrace, and on its right the white sands and dunes fronting the occupation-site in the extinct bay at Rudha'n Achaidh Mhòir

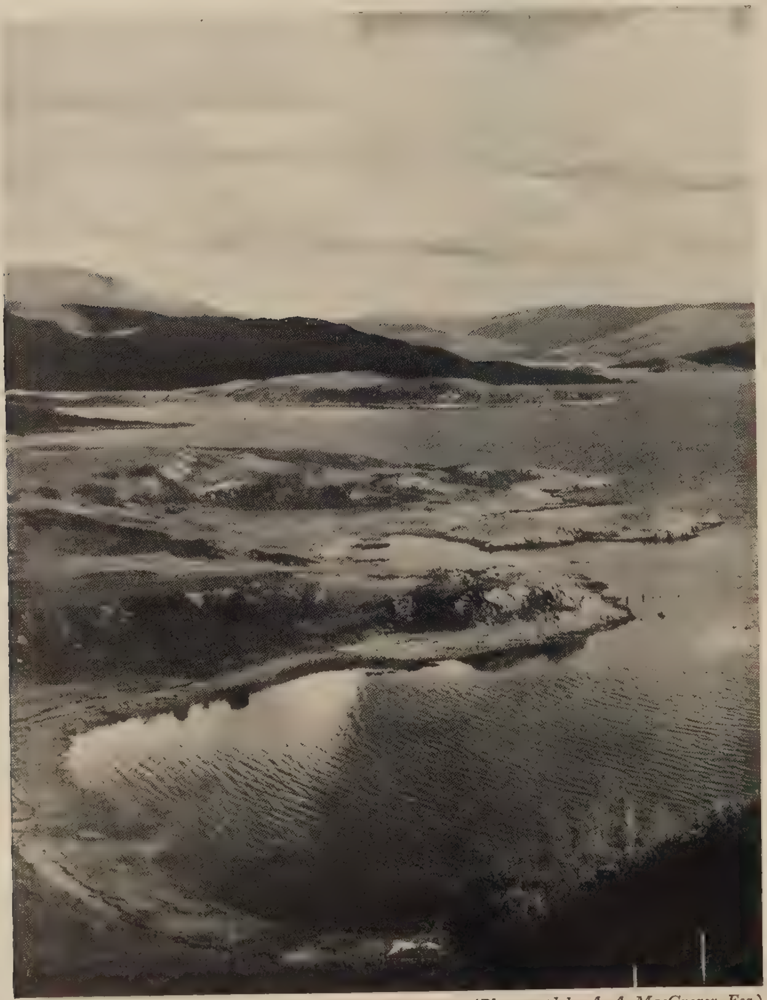


b. Ancient storm-beach in extinct bay at Rudha'n Achaidh Mhòir, Morar, looking south-easterly

Published by the Society of Antiquaries of London, 1951



a. Sand-dunes and ancient storm-beach in extinct bay at Rudha'n Achaidh Mhòir, Morar, looking north-westerly across the Sound of Sleat to Skye



(Photograph by A. A. MacGregor, Esq.)

b. Risga Island from Glen Borrodale Castle. The shell bed is on the left of the island

Published by the Society of Antiquaries of London, 1951

THE OCCUPATION-SITE

During the Early Post-Glacial transgression of the sea the cove between Rudha and Beinn an Achaidh Mhòir, though restricted as now to a width of some 300 yards by the promontories to north and south, extended about 250 yards farther inland, its basin and bed having been excavated in the softer deposits left in the trail of the melting ice. Despite the weathering and erosion of centuries, the shape of the extinct part of the bay is well preserved owing to the protection afforded by an extraordinary development of the ancient raised beach (pl. XXIII, *b*). The greater part of this actually stands considerably higher than the bottom of the dead bay. The surface of the northward part, 28 ft. above present high-water mark, is practically flat, with a sparse growth of bent, has many rough stones strewn in the sand, and is 7 ft. higher than the southward. Its eastern and rear, i.e. landward, side is capped by a storm-built accumulation of large cobbles and boulders, the top 36 ft. above and about 160 yards from present high-water mark. With the seaward fall of the gravel- and sand-charged raised beach proper this forms a veritable rampart. Bent-covered dunes stretching between two narrow openings separate these exposed inner spreads of the raised beach from the present strand (pl. XXIV, *a*). From the circumstance that landward around their base and elsewhere at the site I have found shells, most fragmentary and all evidently of great age, it is possible these are vestiges of squatters' food-refuse. Composed of white sand they rise to a height of 49 ft. The beginning of their formation, like that of most sand-dunes associated with the Early Post-Glacial raised beach of Scotland, is believed to go back to the end of the Atlantic but particularly to the Sub-Boreal climatic phase when the recovery had brought up the land to approximately its present height relative to the sea.

It is concluded that the inner part of the opening, from being a deep-water bay during the Early Post-Glacial submergence, gradually became shallower and reduced to a tidal inlet as the land gradually recovered, until it finally ceased to have any connexion with the sea. In a way, therefore, it appears as the dry basin of a storm-beach dam, obviously long preserved from the invasion of the sea by the piling up of materials on a surf-swept sloping shore. Moreover, the hollow is protected by this embankment of stones from the full force of winds blowing from the sea. On its other sides it is also well shielded from land winds by the circumscribing high grounds. Here, then, was a natural, sheltered, and convenient habitat close to a stream and immediately accessible to a generous rocky shore. Use of the place by prehistoric squatters is proved by stone artifacts littered over its surface. To the native quartz employed in the manufacture of most, some flint entirely foreign to the region was added.

Coarse struck pieces of quartz were found among the rough stones strewn over the northward portion of the raised beach near the sand-dunes. To the south, near a rock-outcrop, the lower level, with small shingle appearing all over it, yielded quartzes and flints. The first were in such abundance as to indicate a definite industry, its relics occurring sporadically over the floor of the extinct bay. The spot producing most flints lay to the east immediately under sandy bluffs. On these a dark-brown peaty seam was discernible about 2 to 2 ft. 6 in. below present turf level. A few quartzes were found on the surface of the raised beach on the south side of Allt Cuairteach, well above the point where the stream crosses the high-water mark of spring tides in Cross Bay.

THE INDUSTRY

Quartz

General Observations. 1. The native quartz occurs in veins in the rocks and as pebbles. Normally coarse-grained and of variable fissility, it resembles most quartz used by prehistoric communities in so many parts of the world. Under blows the Morar variety, of course, yields flakes but seldom true blades. Hence well-marked cores are scarce relics of this quartz industry. Instead, many lumps are found from which only a piece or two have been removed. Owing to the erratic fracture of quartz, well-defined bulbs rarely occur. Swellings and hollows of percussion, however, are fairly pronounced in most products of flaking and in residual pieces. Although the material is not amenable to fine edge-retouch, yet a few specimens proclaim that from a reasonably fair grade the tool-makers could turn out quite good implements. Whether secondarily worked or not, these follow the general run of artifacts produced at Scottish sites having a supply of compact vein-quartz. In the quartz of the Morar region, as in most qualities used elsewhere, distinctive crenellations, with accompanying dulling and fissuring along edges, indicate where blows were dealt.

Actually the quartz artifacts are well made and conform to the standards of quartz-working. Yet, to those unfamiliar with quartz industries, many tools must at first sight seem curious. For much of the raw material used in their manufacture presented itself in laminae weathered or broken out of the rocks. Occurring in various thicknesses, these pieces offered a considerable choice. By using tablets the settlers were saved much of the trouble involved in striking flakes in pebbles of such intractable rock.

2. Most of the simply treated tabular material, primary and prepared flakes, and the few blades produced, served without additional working. Consequently many are worn of edge from employment as knives, scrapers, and saws. These formed part of the light equipment of the settlers, and are therefore in keeping with the simple forms which constitute the bulk of all artifacts made in flint or other stones, from early Mesolithic onward, encountered along the Scottish west coasts.

3. A second group consists of heavy edge-tools simply made in tabular pieces and pebbles by flaking. These belong to the class of implements which first appear in strength on the western seaboard in industries of the Late Mesolithic facies, the Late Larnian in north-east Ireland,[1] and the Obanian in the west of Scotland.[2]

4. A few stones, though quite unworked, exhibit wear from use as improvised implements of a class peculiar to many littoral sites in the West Highlands, Hebrides, and outside Scotland.

5. The surfaces of some artifacts are worn by the action of rain and wind-blown sand. This does not mean that such objects are necessarily older than their fresh-looking companions. In some specimens the alteration makes the signs of wear and/or retouch difficult to recognize.

---

[1] H. L. Movius, *The Irish Stone Age*, Cambridge, 1942, p. 164.

[2] *Infra*, p. 120.

Light Implements. Pl. xxv, no. 1, is a primary flake detached from weathered material. Its separation face is as fresh, however, as when the piece was struck. It displays a pronounced swelling and mark of percussion. This flake may be compared with the crusted example no. 2, the scars upon the face and right side of which testify to further preparation of the parent nodule. Such a piece could have been used as a side-scraper. Of nos. 3 and 4 removed from well-flaked material, the second (no. 4) has fairly salient ridges, a deep hollow of percussion on one face and a diffused swelling on the other. This example has evidently been removed from a core rather than from an unflaked lump. Wear has steeply bruised and indented the margins, as it has the shortest edge of no. 5, a ridged and longer version of no. 4. Despite wear and the action of wind-blown sand, traces of retouch are still visible at the upper end of no. 6. Signs of much utilization show along the irregularly convex edge of no. 7 which must have served as a compound scraper. The fairly thick flake no. 8 retains pronounced positive and negative marks of impact with the knapper's hammer. Its right edge is worn from use, probably as a knife. The steep rough back, formed by the opposite edge, was no doubt convenient for finger pressure. This could also be applied to the companion specimen, no. 9, which is similarly worn along the left edge. A finger-rest is afforded by the natural, steep crusted side of the original pebble in conjunction with the oblique break which is roughened along its basal margin.

So alike are nos. 10, 11 and 12 that it is believed they are derived from similarly prepared basic material. No. 10 appears to be unscathed. No. 11, however, has been treated at the end by the removal of a small flake so as to give a short terminal spur on the right. This could have served as a perforator or awl, of which a much-used example is furnished by no. 12, also worn to a pronounced hollow on one side of its separation face. The shape is very similar to that of certain characteristic flake-implements which occur in Early Neolithic groups in Ulster and south-west Scotland, and was doubtless made in response to a common but not necessarily contemporary need. Typologically, no. 13 is a more distinctive perforator, although fashioned in inferior material and dulled by natural agencies. The shape is current in many coastal assemblages from Early Larnian onward.

Nos. 14 and 15 more closely resemble familiar blades than any other specimens in the collection. They prove that given suitable material the exponents of this small industry were able craftsmen. Moreover, the large medial scar and the faceted butt of no. 14 indicate extraction from well-prepared stone. This specimen is broken across its upper end. Since the facet due to the fracture is sand-glazed, the injury is probably an old one. Like its companion, no. 15 is worn along the edges. It has also been previously trimmed by the removal of marginal slivers, perhaps for fitting the blade into a handle of bone or even a wooden shaft. This treatment appears also in several examples from this site. That its practice was of ancient origin and widespread is shown by the study of immense quantities of quartz artifacts produced by industries of different prehistoric cultures from many parts of the world.

Though affected by wind-blown sand, and broken, yet no. 16 stands out as a true end-scraper made by fine retouch on a blade. From among several small trimmed scrapers, three have been selected as representative. The first, no. 17, is made on a thick, short, and wide slice of a pebble with a well-marked swelling of percussion. Although the stone is much weathered, yet the retouches along its edge of horseshoe shape are quite plain on the separation face. This feature of inverse retouch appearing in several implements from the Morar site is a noteworthy characteristic in tools of the later Larnian (Mesolithic) coastal industries of north-east Ireland[1] and south-west Scotland. The second, no. 18, sand-glazed, is fashioned on the end of a piece of tabular vein-quartz. Its concave left side affords a good grip. A crusted piece of quartz was used for the third steeply dressed tool, no. 19. All these scrapers parallel forms commonly produced in the coastal Late Mesolithic (Larnian) and Early Neolithic industries of Ulster and south-west Scotland.

No. 20 consists of an unusually fine piece struck from well-prepared material. It now wants a wing, yet enough remains to indicate its shape when complete. Trimmed and worn along its concave edge, it ranks as a 'fish-tail' scraper. In more developed form this type is seen at its best in the Early Neolithic industry of Ballantrae, Ayrshire,[2] as the counterpart of contemporary implements from sites in north-east Ireland. It seems to be a variant of the small straight-edged *tranchet* peculiar to the provincial Early Post-Mesolithic littoral culture. In Scotland a precursor of the type would possibly appear in the advanced Early Larnian at Albyn Distillery, Campbeltown.[3] With this particular concave scraper from Morar may conceivably be ranged such of its companions as the perforators nos. 12 and 13. Comparable implements in an Early Campignian industry, which has also yielded *tranchets* on flakes, at Champlat, Boujaucourt (Aisne) have been commented on for the usefulness of the widely separated angles of the expanded edge.[4]

A core, no. 21, the residue of a pebble of fine-grained quartz, stands out as a rarity at a site where so many flakes were extracted from tabular quartz. It compares favourably with flint cores from which good blades were detached. Altogether eight flakes came off the parent lump. Five were struck in the length from the broad, flat natural face. The subsequent removal of two across the narrow end created the second platform which served for the production of one flake only. On the outline drawings, showing the plans of the (*a*) basal and (*b*) upper platforms, dots indicate the points of percussion. That new platforms were prepared in other quartz cores, as in well-developed industries using more tractable material, appears from a few trimming-flakes, e.g. no. 22, which contrasts with pieces removed in the treatment of tabular quartz, as no. 23.

Heavy Implements. Nos. 24 and 25, pl. xxv, are representative of a fairly large series of simple edge-tools regarded as choppers, or even as hand-axes. They could have been used in the preparation of carcasses, the breaking of big bones, and even the treatment of wood. No. 24 is illustrated as an example manufactured in a pebble of

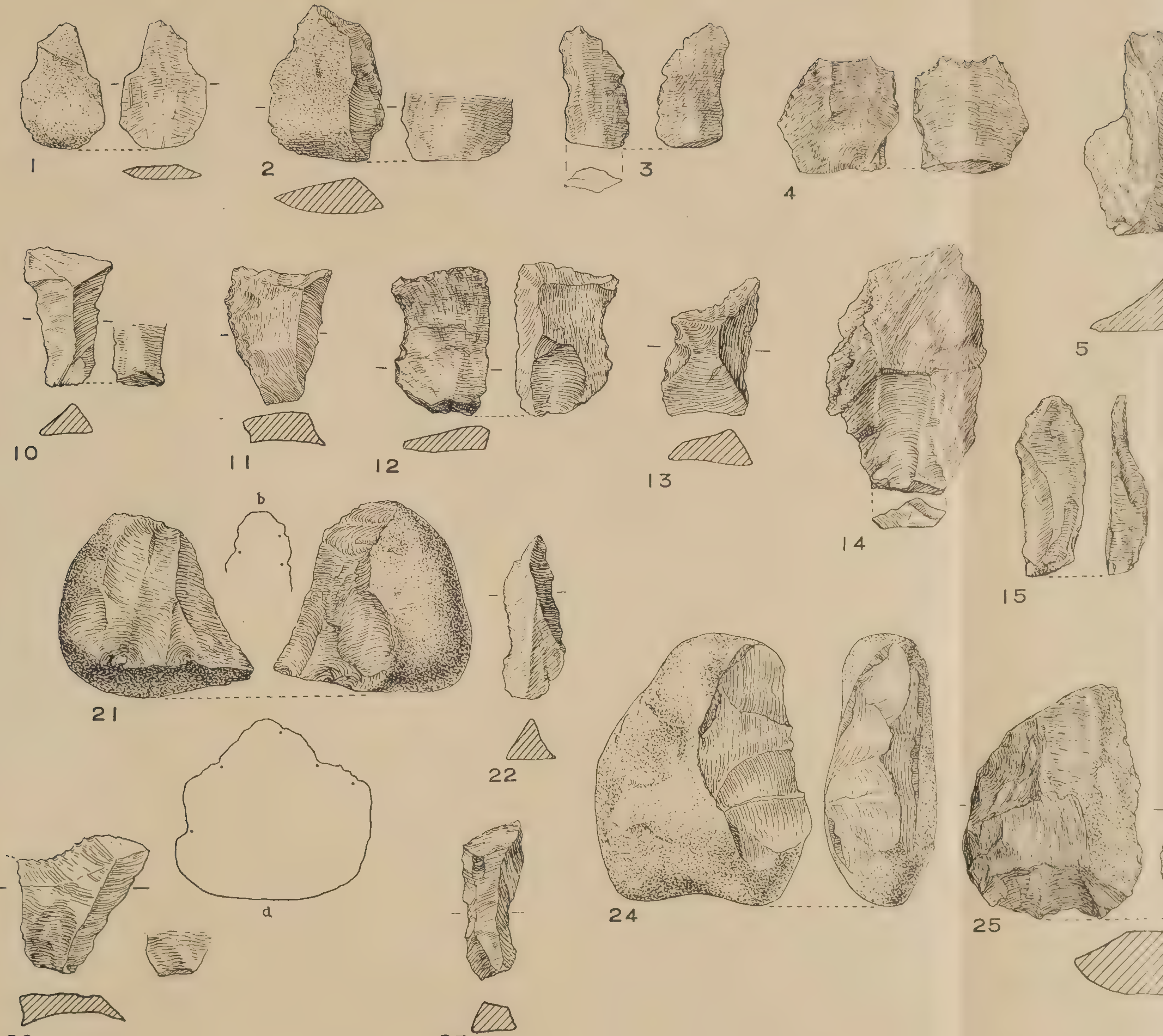
---

[1] H. L. Movius, *op. cit.*, 1942, p. 164.

[2] A. D. Lacaille, 'The Stone Industries associated with the raised beach at Ballantrae', in *Proc. Soc. Ant. Scot.*, vol. lxxix (1944–5), pp. 98–9, and fig. 4, nos. 59–62.

[3] W. J. McCallien and A. D. Lacaille, 'The Campbeltown Raised Beach and its contained Stone Industry' in *Proc. Soc. Ant. Scot.*, vol. lxxv (1940–1), pp. 81–2, and fig. 6, no. 71.

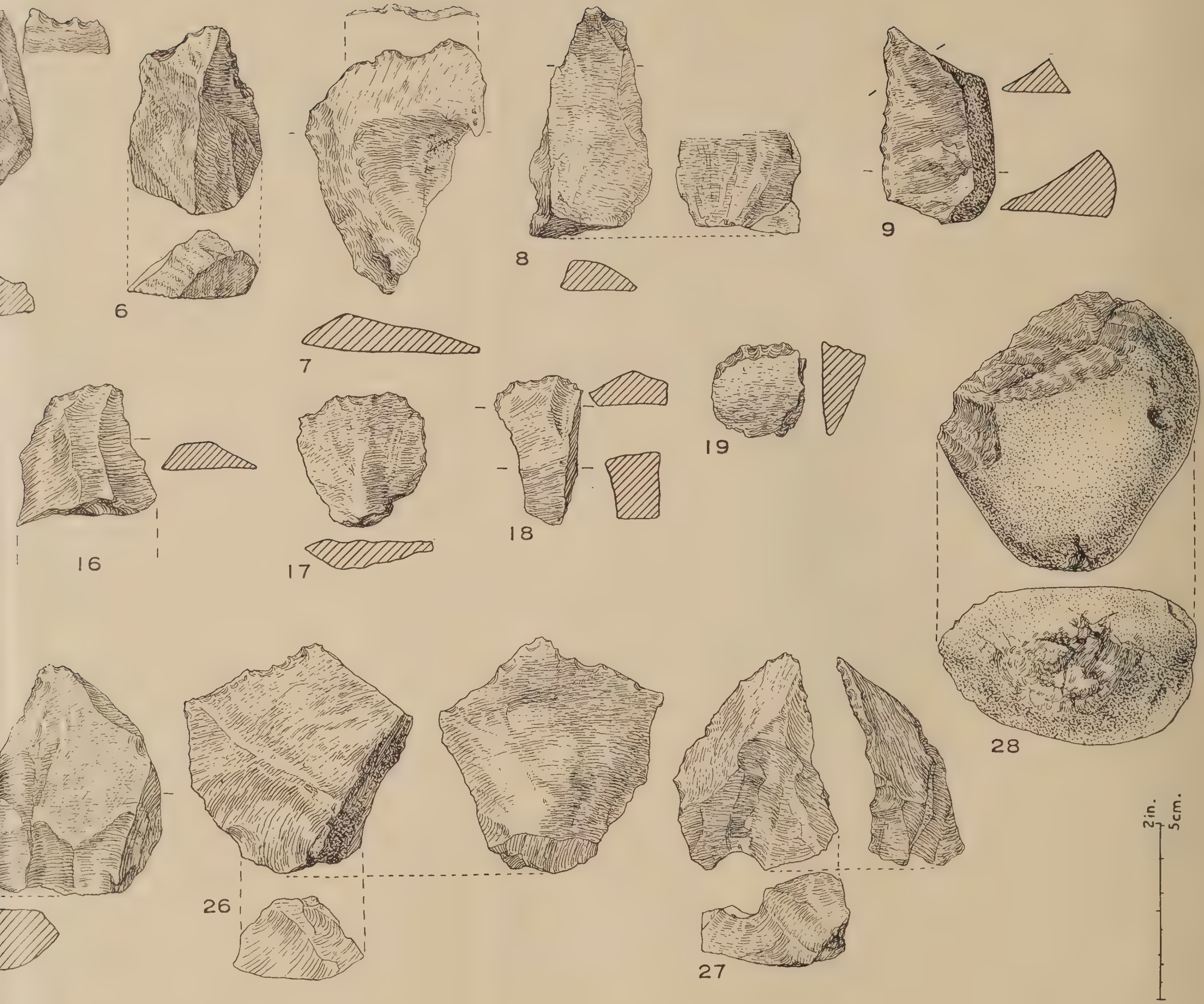
[4] E. Octobon, 'Le Pré-Campignien ou Campignien I. Station Pré-Campignienne de Champlat, Hameau de Boujaucourt (Aisne)', in *Bull. Soc. Préhist. Franç.*, vol. xxviii (1931), pp. 172–84.


1
2
3
4
5
10
11
12
13
14
15
b
21
22
d
20
23
24
25

MORAR QUART

Published by the Society of

PLATE XXV


6
7
8
9
16
17
18
19
26
27
28
2in.
5cm.

Z INDUSTRY

ntiquaries of London, 1951

close-grained quartz of good quality. Five characteristic pits of percussion show how simply the long sinuous working-edge was executed. One wide flake was removed from one of the faces, then along the resulting platform four blows were dealt detaching short flakes from the other face. These two tools belonging to a large group are true to the standard of the numerous massive flint choppers which characterize the Late Larnian culture, especially as represented in the Curran deposits at Larne, Co. Antrim.[1]

No. 25, made on a pebble, apparently split before being picked up by the knapper, is a crude equivalent of a flake-adze. At the wide end it has been simply flaked on both faces to a cutting-edge. The largest scar, deep and initiating from a spot near the right-hand corner, gives the tool the look of a *tranchet*. In shape resembling a wedge, this implement could easily be hafted.

No. 26 is typical of the material serving for the big scrapers made here and put to considerable use. Although the surfaces of the specimen illustrated are much affected by natural agencies, yet the flake-ridges and facets of preliminary working on the parent lump are clearly discernible. Among the few similar objects known to me from Scottish sites are quartz examples from coastal localities in the Rough Bounds,[2] and some from Valtos, Uig, Lewis, in gneissose rocks and possibly of Broch Age.[3] Comparable and usually ill-defined types made in flint are among the products of the Late Larnian industries of north-east Ireland, e.g. at Glenarm, Co. Antrim.[4]

The thick trimming flake no. 27, from the working down of a pebble, is interesting for the many truncated facets on its flanks. Still more remarkable are the deep flake-scar on its face and the accompanying hollow in the butt. This well illustrates the effect of a sharp hammer-blow on a quartz edge.

It is possible that some of the larger pieces of tabular quartz were primarily treated by striking upon the sharp edges of rocks or of heavy anvil-stones. Hammer-stones, however, were certainly employed to deal with smaller raw material and for the normal flaking and shaping of many tools. The egg-shaped quartz pebble, no. 28, much abraded and chipped by long service, is typical.

Flint

About sixty flints have been found at the Morar site. Consisting mainly of chips, poor flakes, and artificially scarred and sliced pebbles, the whole rather suggests that the knappers tested the raw material and rejected most. Many of the specimens are patinated creamy-white; a few are fire-crackled. Broken pieces and examples unaffected by surface change reveal that they are composed of the usually indifferent grades of honey and greenish flint native to the Isle of Mull and to Morven on the mainland, and recognized in artifacts from the islands Oronsay and Risga, from caves Oban, and from sites on the coast of Ardnamurchan.

---

[1] H. L. Movius, *op. cit.*, 1942, pp. 164–5, and fig. 29, no. 2.

[2] *Infra*, pp. 130–1.

[3] A. D. Lacaille, 'A Stone Industry, Potsherds, and a Bronze Pin from Valtos, Uig, Lewis', in *Proc. Soc. Ant. Scot.*, vol. lxxi (1936–7), pp. 282–92, and specimens in figs., particularly 4, nos. 7, 9, and 12.

[4] H. L. Movius, *op. cit.*, 1942, pp. 161–4, and fig. 28, no. 1.

Fig. 3 (nos. 1–9), showing some of the characteristic rough pieces, as nos. 1 and 2, and the best-defined forms, nos. 3–6, give an idea of the size and quality of this material. As used here, flint served for the manufacture of small and more durable blades such as could not certainly be obtained from the native quartz.

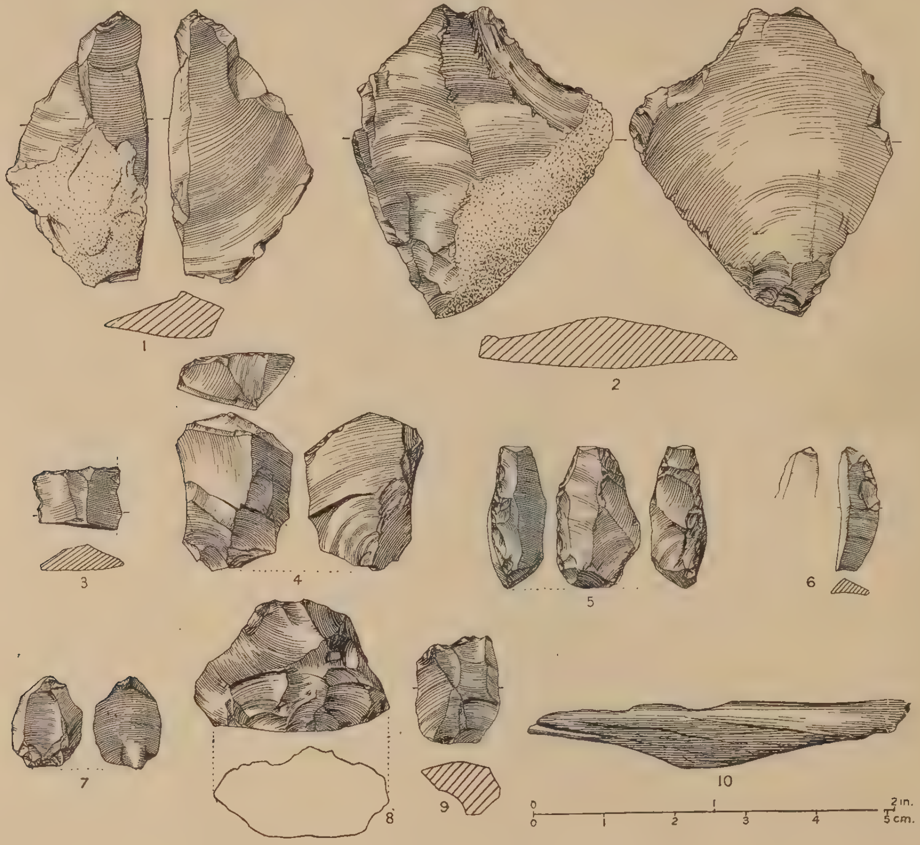


FIG. 3. Morar flint industry and a piece of bone.

Among these few flint artifacts, it is remarkable that some should be so important for their implications. Thus, no. 6, a narrow blade, bears the most delicate dressing along the lower part of its left edge. The parallel retouch is flat, and, with every look of having been applied by pressure, is typical of Bronze Age craftsmanship which differs entirely from the characteristic steep edge-blunting of Upper Palaeolithic and Tardenoisian work and tradition. Comparable blade-implements and other artifacts similarly treated have been found on the north coast of Ardnamurchan.[1] On the strength of their associations they have been held to belong to the Beaker complex. Hence, apart from geological and geographical considerations, they point to a relatively late Post-Glacial dating for the Morar stone industry. This must, however, have produced true microliths, since Tardenoisian tradition was borne hither. No. 7 of fig. 3 proves this. It is a plain butt-end micro-burin, the by-product of a small blade divided by

[1] T. C. Lethbridge in *Man*, 1927, no. 115; and *infra*, pp. 128–34.

the specialized technique regarded as the hall-mark of Tardenoisian industrial method. The late survival of this in Scotland—well into the Bronze Age, indeed—is already fully attested.

Small cores, as nos. 8 and 9, furnished the fine blades required.

Bone

A few pieces of mineralized bone have been picked up at the site. Only one seems worth illustrating for its appearance of having been cut and scratched with a stone tool, and for its unquestionable look of great antiquity (fig. 3, no. 10).

Improvised Tools

Among the stones showing signs of utilization, several tapering rods of quartz stand out (fig. 10, no. 2). About 6 in. long, they seem to have been chosen for their convenient size. That they were implements appears from the traces of wear which they bear uniformly at the narrow end. While they may have served as picks, it is likelier that they fall into the same class of improvised instruments as certain worn pebbles which are so abundant in the refuse of occupation at all Obanian sites explored in the west of Scotland.[1] Good reasons have been advanced to show that many of these objects were used to strike limpets off the rocks.

THE OBANIAN STATION ON RISGA IN LOCH SUNART, ARGYLL

A. As indicated in the foregoing, no type of implement used in the extinct bay in South Morar is peculiar to the site, for various influences appear in the industry. These could not, of course, have reached the place directly from outside the Rough Bounds. In fact they have been detected in other groups from this region, the largest and most comprehensive being assignable to full Obanian culture. A review of this will not only help to assess the Morar industry, but also bring to notice hitherto unknown aspects of the true Stone Age of Scotland. It is a coincidence that this collection should come from the southernmost prehistoric site in the Rough Bounds, and the farthest from Morar. This is the rocky islet Risga belonging to the small archipelago in the narrows of Loch Sunart (pl. XXIV, *b*), a furlong from the north shore, south by east of Glen Borrodale Castle, and 12 miles east-south-east of Ardnamurchan Point. From it there have been recovered relics of occupation which provide many standards for comparison inside and outside the Rough Bounds.

B. In 1920 the digging of a kitchen-midden on Risga by Messrs. A. Henderson Bishop and L. M'L. Mann, of Glasgow, yielded informative remains of food, also tools of stone, bone, and red deer antler. Save for a good article in a daily newspaper[2] and various references to the place in scientific works, no detailed account of the excavations has yet appeared. It is understood, however, that the refuse was fully 1 ft. thick, and that it lay on a narrow shelf of rock whose outer edge stands some 30 ft. above the water,[3] or within the limits of the Early Post-Glacial expansion of the sea.

---

[1] *Infra*, pp. 125–6.

[2] *The Glasgow Herald*, 21st August 1920.

[3] Sir George Macdonald, 'Prehistoric Scotland': the typescript of an unfinished work, p. 38.

The materials from Risga are now deposited in the Hunterian and Kelvingrove Museums, Glasgow. Examination reveals that they are quite free of sand and shingle, and that in their animal and artifact content they are virtually the same as the relic-beds in the caves and rock-shelters explored at Oban and the kitchen-middens excavated on the Isle of Oronsay over 40 miles to the south-west. They speak of the diet, activities, and industries of squatters whose economy was that of the Old Stone Age. Having no knowledge of agriculture, the grinding of stone, or the manufacture of pottery, these folk depended on food-collecting, fishing, fowling, and hunting. Since the last must assuredly have been practised on the adjacent mainland, the seasonal occupation of Risga is indicated. Indeed, it can hardly be imagined that this exposed island, which is only 30 acres in area, could have been lived on all the year round.

C. The largest part of the remains consists of shells, the following molluscs being represented: Mussel, *Mytilus edulis* L.; Oyster, *Ostrea edulis* L.; Scallop, *Pecten opercularis* L.; Cockle, *Cardium edule* L.; Razor-shell, *Solen ensis* L.; Limpet, *Patella vulgata* L.; Whelk, *Buccinum undatum* L.; Periwinkle, *Litorina litorea* L. Of these, the shells of the limpet are by far the most numerous.

There occur also the broken carapaces and claws of the Common Crab, *Cancer pagurus* L., and the Velvet (or Fiddler) Crab, *Portunus puber* (L.).

Among masses of fish-bones and scales, those of the following forms have been identified: Tope, *Galeus canis* Rond.; Spiny (picked) Dog-fish, *Acanthias vulgaris* Risso; Angel-fish, *Squatina squatina* Dum.; Skate, *Raia batis* L.; Thornback Ray, *Raia clavata* L.; Conger-eel, *Conger conger* L.; Grey Mullet, *Mugil capito* Cuv.; Haddock, *Gadus aeglefinus* L.; Black Sea-bream, *Cantharus lineatus* Bl.

Whole and fragmentary bones exemplify aquatic birds, as follows: Gannet, *Sula bassana* L.; Goose, *Anser* sp. L.; Cormorant, *Phalacrocorax carbo* (L.); Shag, *Phalacrocorax graculus* (L.); Red-breasted Merganser, *Mergus serrator* L.; Water-rail, *Rallus aquaticus* L.; Gull, *Larus* sp. L.; Common Tern, *Sterna fluviatilis* Naum.; Great Auk or Garefowl, *Alca impennis* L.;[1] Razorbill, *Alca torda* L.; Guillemot, *Uria troile* Lath.

Despite the comminuted and splintered state of the mammalian bones and antlers, many split doubtless for the marrow or for implements, enough survives for the recognition of: Rorqual, *Balaenoptera* sp. L.; Wild-boar, *Sus scrofa* L.; Red Deer, *Cervus elaphus* L.; Otter, *Lutra vulgaris* Erxl.; Marten, *Martes foina* L.; Grey Seal, *Halichoerus grypus* Nils.; Common Seal, *Phoca vitulina* L.

Were it not for the fragmentary condition of most of the vertebrate bones, additions could doubtless be made to the foregoing list. Nevertheless, this suffices to demonstrate that, except for those of the garefowl and wild-boar, all the remains are of a fauna still existing on the west coast of Scotland.

D. In the Hunterian and Kelvingrove Museums are also preserved relics of the stone industry recovered from shell-mounds excavated on Oronsay. This material has never been sufficiently made known, excusably perhaps because of the great interest which attaches to the food-remains and particularly to the implements of bone and antler. From the fragmentary and bruised condition of the flaked artifacts it has been inferred[1] that these illustrate the utmost working down of flint, which material, though extremely scarce, occurs as small pebbles here and on the neighbouring island of Colonsay. From the nearest known beds in the Isle of Mull, at Carsaig on the south, and in Morven on the mainland it may have been ice-borne. The possibility that some may also have been carried by man cannot, however, be overlooked, because a little flint, believed entirely foreign, was used at many island and coastal sites in areas in the west, including Morar, none of which could have been affected by drifts from Mull or Morven. Being near one of these supplies, the squatters on Risga freely used the rather low grades of fawn, grey, and striped green flint obtainable. Examination of the series from Oronsay shows the typological identity of its crude components struck in flint with scores of examples produced on Risga. This parallelism appears at both sites in some of the larger stone tools manufactured in material other than flint, and in implements made in bone and red deer antler. These are the counterparts of objects from shell-mounds explored on Oronsay before[2] and during[3] 1913, and from caves and rock-shelters opening behind the Early Post-Glacial raised beach at Oban.[4]

---

[1] It is believed that the last of this interesting race was killed in Iceland in 1844. See Symington Grieve, *The Great Auk, or Garefowl*, London, 1885, p. 3.

The Stone Industry

The native quartz supplemented the flint used in the stone industry of Risga. From these materials simple flakes and crude blades were obtained. Without trimming, they answered most of the food-gatherers' needs. Hence, as in all Scottish coastal industries, many exhibit the signs of wear as scrapers, knives, and saws. Edge-retouched examples, however, are not uncommon. These consist mainly of basic flakes and pieces dressed along a margin of convenient outline. Most of the flints retain their pristine sharpness, though many are patinated. Specimens in all these categories are shown in figs. 4 and 5.

Light implements. Fig. 4, no. 1, is a primary flake struck from a flint pebble, while examples from prepared material are represented by nos. 2 and 3–6, a flake and blades of flint, no. 4 being worn at the upper end. No. 7, a quartz flake, shows signs of considerable use along the right edge. Another, no. 8, is quite unworn. The fine, thin, and symmetrical leaf-shaped quartz flake-implement no. 9 is exceptional. Over most of its upper surface it bears shallow scars due to the removal of scale-like squills. Such treatment[5] shows that the Risga knappers had an inkling of developed methods of working stone. If it is not an armature, then it can only be regarded as a trimming detached from a flaked implement. Such first appear in the advanced Early Larnian of Kintyre[1] under some Baltic influence from south-east Scotland. Simpler dressing has been expended on the quartz flake no. 10, the removal of slivers along the underside of the right edge having converted it into an efficient knife. This method, we have seen, is evinced in objects from the site in Morar.[2] More usual and delicate marginal trimming appears along the left of the pointed flint blade no. 11. The steep retouch along the right edge of the flint no. 12 was presumably for a finger-rest.

---

[1] H. Breuil, 'The Pre-Neolithic Industries of Scotland', in *Proc. Soc. Ant. Scot.*, vol. lvi, 1921–2, pp. 266–7.

[2] Symington Grieve, *op. cit.*, 1885, pp. 53–8; Joseph Anderson, 'Notes on the Contents of a Small Cave or Rock-Shelter at Druimvargie, Oban; and of Three Shell-Mounds in Oronsay', in *Proc. Soc. Ant. Scot.*, vol. xxxii, 1897–8, pp. 306–13.

[3] A. Henderson Bishop, 'An Oransay Shell-Mound—A Scottish Pre-Neolithic Site', in *ibid.*, vol. xlviii, 1913–14, pp. 52–108.

[4] (*a*) Joseph Anderson, 'Notice of a Cave Recently Discovered at Oban, Containing Human Remains, and a Refuse-Heap of Shells and Bones of Animals, and Stone and Bone Implements', in *ibid.*, vol. xxix, 1894–5, pp. 211–30; (*b*) Sir William Turner 'On Human and Animal Remains Found in Caves at Oban, Argyllshire', *ibid.*, pp. 410–38.

[5] e.g. the surface flaking of the axe-like tools produced in the Late Larnian industries of Ulster, probably influenced by Baltic Forest Culture tradition from Scotland (Movius, 1942, pp. 166–70, and figs. 31, nos. 6–8, and 32, nos. 1–4, all from the Curran, Larne). In this country a closely surface-flaked tool comparing with the Irish examples has been noted in the Early Neolithic industry

The microlithic character of the steep battering applied to the uppermost edge of a slightly burnt flint (fig. 5, no. 14) differs from the flat and finer pressure work on the tiny blade from Morar (fig. 3, no. 6).[3] It is not surprising, therefore, to find Tardenoisian tradition expressed in the by-products of some pieces divided by the specialized technique, which early in the Atlantic climatic phase had been absorbed in the Larnian of south-west Scotland.[4] Thus no. 13 (fig. 5), the waste of an abruptly blunted flint blade is a typical notchless upper-end micro-burin.[5] It is recalled that a butt-end micro-burin was recognized among the stone artifacts from Cnoc Sligeach, one of the Oronsay shell-mounds[6] which is referable to the same culture as that represented at Risga. These pieces, and the example from Morar (fig. 3, no. 7),[7] represent the known westernmost spread of Tardenoisian methods in the British Isles.[8]

Besides using improvised scrapers, the settlers manufactured many well-defined but usually crudely retouched forms in thick flakes and a variety of pieces. The representative flint series figured, an end-scraper no. 15, a side-scraper no. 16, and a side-and-end-scraper no. 17, calls for little comment, since its included shapes are constant in prehistoric industries from Upper Palaeolithic onward. If not so frequent, the last (no. 17) is nevertheless a form which appears in Scottish Early Larnian and survives in Early Neolithic industries. Though isolated and not to be considered as a derivative of these, but as demonstrating that typology alone is not a sure guide, yet the concave scraper no. 18 cannot pass unremarked. Fashioned much in the style of Early Neolithic 'fish-tail' forms from sites on the Irish and Scottish shores of the North Channel, the specimen is very similar to a tool found at Rough Island, Strangford Lough,[9] Co. Down, and to another found in the same conditions at Ballantrae, Ayrshire.[10] The drawing of no. 19 shows a compound tool made in a quartz flake, roughly shaped to a scraper end and bearing fine, steep inverse retouch along the right margin. This careful working should be compared with the peculiar traces of dressing in no. 10. Steep-sided examples, as no. 20, flint, were in favour at Risga. This type is distinguishable from the true, but not numerous, profusely flaked cores, which

---

of Ballantrae (A. D. Lacaille, *op. cit.*, 1944–5, p. 100, and fig. 4, no. 67).

[1] W. J. McCallien and A. D. Lacaille, *op. cit.* 1940–1, p. 81, and fig. 6, no. 70.

[2] e.g. pl. xxv, no. 15, and p. 111, *supra*.

[3] *Supra*, p. 114.

[4] W. J. McCallien and A. D. Lacaille, *op. cit.*, 1940–1, pp. 70–3, 87, and 91, and fig. 3, nos. 28–30.

[5] A. D. Lacaille, 'Scottish Micro-burins', in *Proc. Soc. Ant. Scot.*, vol. lxxvi, 1941–2, pp. 104–8 and 119.

[6] H. Breuil, *op. cit.*, 1921–2, pp. 265–6 and fig. 3, no. 1.

[7] *Supra*, pp. 114–15.

[8] So far there is nothing to show that fine Tardenoisian technical methods reached Ireland.

[9] H. L. Movius, 'Report on a Stone Age Excavation at Rough Island, Co. Down', in *Journ. Roy. Soc. Ant. Ire.*, vol. lxx, 1940, p. 131 and fig. 7, no. 78.

[10] A. D. Lacaille, *op. cit.*, 1944–5, pp. 98–9, and fig. 4, no. 62.

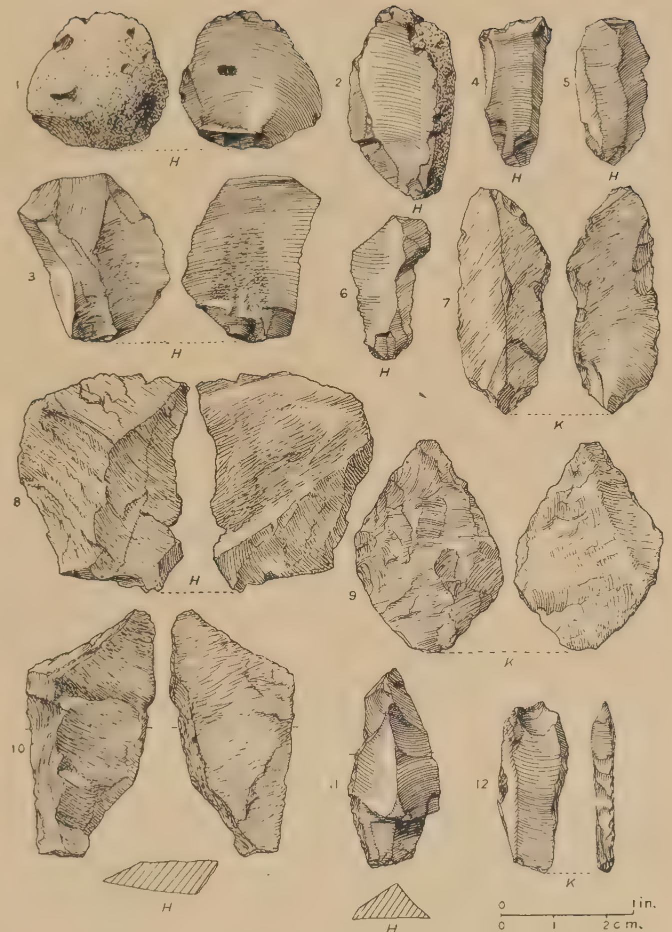

1
H
2
H
4
H
5
H
3
H
6
H
7
K
8
H
9
K
10
H
11
H
12
K
0
1
2 cm.
1 in.

FIG. 4. Risga stone industry: Nos. 1–6, 11–12, flint; Nos. 7–10, quartz. (*H = Hunterian Museum; K = Kelvingrove Museum.*)

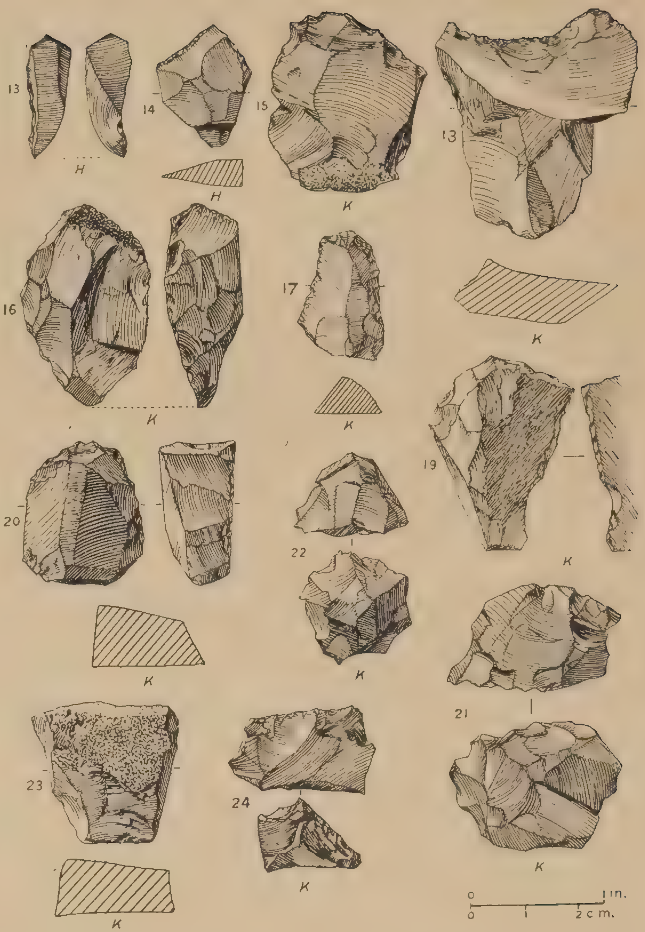

13
H
14
H
15
K
13
K
16
K
17
K
19
K
20
K
22
K
21
K
23
K
24
K
0
1
2 cm.
1 in.

FIG. 5. Risga stone industry: Nos. 13–18, 20–24, flint; No. 19, quartz. (*H = Hunterian Museum; K = Kelvingrove Museum.*)

by the irregular disposition of scars and flake-beds proclaim that the knappers found much of the flint to be recalcitrant, e.g. nos. 21 and 22. Rejected pieces, as no. 23, and trimming-flakes, e.g. no. 24, confirm this. They are the kind of object which has been brought to notice as representative of the flaking industry of the shell-mound people of Oronsay.[1]

Heavy Implements. Owing to the small size of the flint obtainable, quartz was used by the Risga folk for the manufacture of heavier equipment. This included picks, which might have served also as perforators, e.g. fig. 6, no. 25, a large flake-implement, triangular in section in its upper part and finely flaked over a little of the separation face, and no. 26, boldly scarred like a core. Such objects strongly resemble tools devised in the Larnian coastal industries of north-east Ireland, e.g. the 'Cushendun pick' of the early facies[2] and its derivatives of the later. The specimens from Risga, like examples from Morar[3] which assuredly fall into the same category, must have been made in response to a need common to generations of strand-loopers on the Atlantic seaboard.

Simple cutting-tools were also produced in quartz, probably to deal with wood, bone, and antler. The most outstanding are elementarily treated on one or more faces and have chisel- or adze-like cutting-edges, e.g. nos. 27 and 28. Bruises at the upper end suggest that some were used with a heavy hammer. That these objects may be regarded as *tranchets*, albeit of the crudest, is justified not only because of the antecedents of the culture represented at Risga, but also by the recognition of the type in industries at coastal sites ranging from the North Channel to Morar and beyond. These implements rank with the heavy, elementarily sharpened pebbles from Caisteal-nan-Gillean kitchen-midden, Oronsay,[4] which, as seems likely, were used for woodworking. They have already been recognized as comparing with certain elementary Late Larnian tools.[5]

Gravers too, for bone-working, had a place in the same tool-kit, e.g. fig. 6, no. 29, and spalls from their manufacture, as no. 30. Such tools occur in the Early Mesolithic[6] and later industries[7] associated with the raised beach in the south-west. But relics of bone work with which they must have been connected have not so far been found there. Hence particular interest attaches to the Obanian gravers recovered with artifacts in the manufacture of which they were employed.

The Bone Industry

Scores of the very numerous pieces of bone and deer-horn from the refuse-heaps are rudimentary implements. Like those of stone, the commonest elementary forms in bone and antler found on Risga are but utilized splinters, split cleanly in the diaphysis and broken across, presumably by a blow with a stone tool. These bits are

---

[1] H. Breuil, *op. cit.*, 1921–2, pp. 265–6, fig. 3, nos. 2–7.

[2] H. L. Movius, *op. cit.*, 1942, p. 157, and fig. 25, nos. 1–4.

[3] *Supra*, pp. 110 and 112–13.

[4] H. Breuil, *op. cit.*, 1921–2, p. 269, and examples in fig. 4.

[5] H. L. Movius, *op. cit.*, 1942, pp. 183–5.

[6] W. J. McCallien and A. D. Lacaille, *op. cit.*, 1940–1, pp. 82–4, and fig. 6, nos. 73–5.

[7] A. D. Lacaille, *op. cit.*, 1944–5, p. 98, and fig. 4, nos. 56–8.

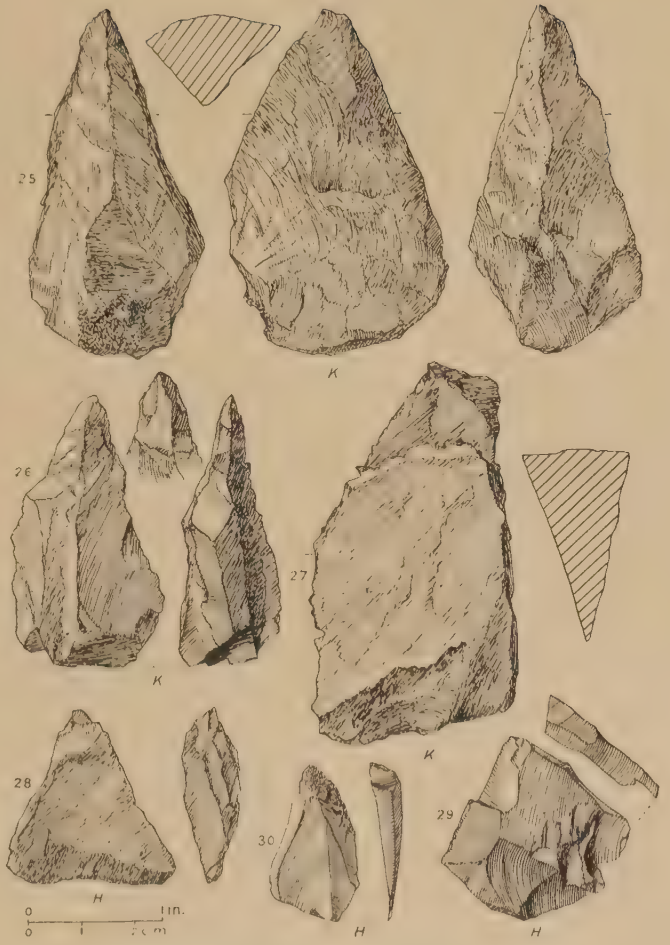

25
K
26
K
27
K
28
H
29
H
30
H
0 1 in.
0 1 2 cm

FIG. 6. Risga stone industry: Nos. 25–28, quartz; Nos. 29–30, flint. (*H = Hunterian Museum; K = Kelvingrove Museum.*)

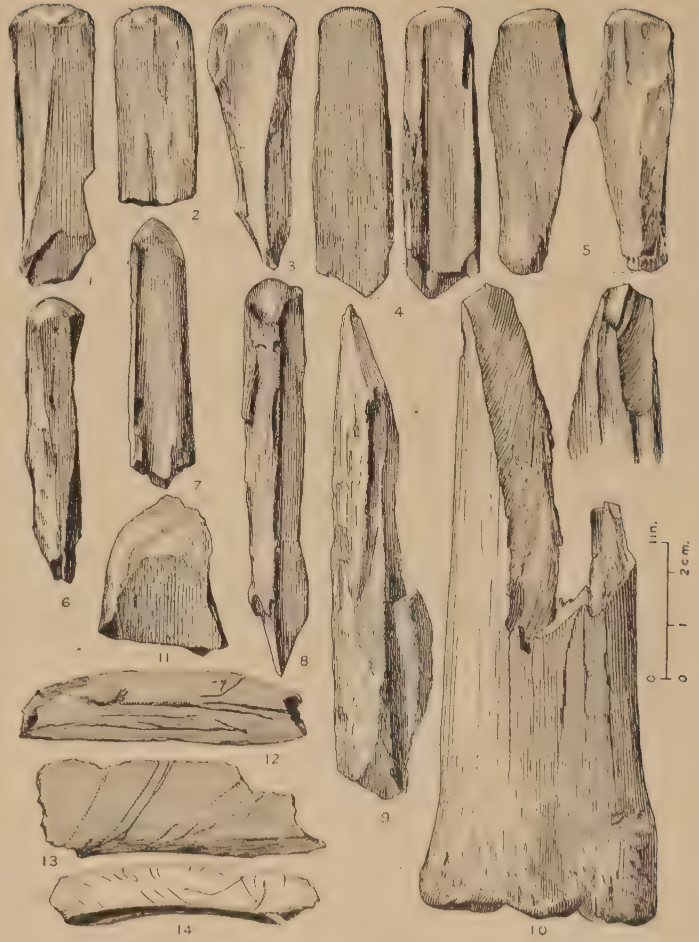

1
2
3
4
5
6
7
8
9
10
11
12
13
14
0 1 2 cm
0 1 in.

FIG. 7. Risga: Nos. 1–11, bone implements; Nos. 12–14, bone fragments. (*All in Kelvingrove Museum.*)

remarkably uniform in length and in the amount of their end-wear.[1] Usually one of the surfaces only is involved, but sometimes more. It has been observed that in the case of dense material particularly, the utilized place is often as smooth as ivory. Sometimes, however, this end is faintly striated as if used with an abrasive auxiliary. Variants formed in bone are figured (fig. 7, nos. 1–7). Thus, in no. 1 the bevel appears on a flattish face, in no. 2 on a convex, and in no. 3 on a slightly concave surface. In no. 4 a convex and concave face are affected. In no. 5 two flattish faces are worn, one bearing the scars of short preparative flaking. The end of no. 6 is worn to a perfect round, that of no. 7 rubbed obliquely on both sides.

No. 8 seems to be a dual purpose instrument. Like its companions, it owes the condition of its upper end to attrition, but the lower appears to have been intentionally pointed by treatment of the sides. This specimen leads to a consideration of worked pieces. Though researches and experiments have not been carried far in this direction, yet it seems that prehistoric man flaked bone in much the same way as he did flint. That he must therefore have observed something of the structure of bones would appear from the manner in which many pieces are split and scarred. Thus no. 9 is more than just a splinter from a meat-bone. It was deliberately detached by percussion with a stone tool, but whether intended as an implement, or whether split off in the making of one, cannot be determined. No. 10, a large portion of a metacarpus of red deer, however, only leaves room for speculation as regards its purpose. Split first, possibly by the insertion of a stone wedge, it was then flaked on one side at the top of the resulting prong as would appear in a very similar object from the MacArthur cave, Oban.[2] Obviously this was the working-end of the tool from Risga, and the thick condylar process the handle of the tools from both sites. How the separation surfaces and the facets of no. 10 compare with the edges of accidentally broken bones appears in the drawings of nos. 11–14. These bits are interesting for other reasons also, no. 11 as a fragment of an implement with an edge rubbed to a polish, no. 12 for its superficial scoring with a sharp instrument, and nos. 13 and 14 (the second a piece of rib) for their fine artificial markings which may conceivably represent feeble attempts at ornamentation.[3]

The exact counterparts of these simple tools abound in the collections from all the kitchen-middens excavated on Oronsay and from the refuse of occupation in the caves and rock-shelters at Oban.[4] It has been suggested[5] that the objects with smoothed ends owe their conditions to their having been used to scoop limpets from the shells which are the most abundant of the food-remains in the deposits. Another explanation is based on analogy with modern bone tools for finishing leather, and with comparable ones used by Eskimos in the preparation of skins. Not only so, but ancient examples have been cited, chiefly from the Orkneys, as well as from the Swiss lake-dwellings.[6]

---

[1] Cf. the end-worn pebbles from here (pp. 125–6), from Oronsay, and Oban, as well as from the Morar site (p. 115).

[2] Joseph Anderson, *op. cit.*, 1894–5, p. 222 and fig. 10.

[3] Cf. the two lined fragments of barbed bone points from Cnoc Sligeach, Oronsay (A. Henderson Bishop, *op. cit.*, 1913–14, p. 97, and fig. 38).

[4] *Ibid.*, p. 95.

[5] Similar implements of bone and deer-horn have been found in a shell-heap on Inchkeith in the Firth of Forth (Joseph Anderson, *op. cit.*, 1897–8, p. 304 fn.).

[6] Joseph Anderson, *op. cit.*, 1894–5, pp. 222–3.

Writers on the industries of Oronsay and Oban have commented on some of the larger tools formed from pieces of deer-antler, among which are objects like wedges and shoe-horns from the first-named place.[1] These could have served for stripping the carcasses of cetaceans and other big animals. Risga affords a longer example than any previously noted (fig. 8, no. 15). Part of the beam of a large stag's antler, which may have been perforated to hold a haft, this tool is worn quite thin at the ground end. Fig. 9, no. 16, seems to be the remnant of a related but lighter tool. These implements are akin to those associated with the bones of stranded whales found in the estuarine clays of the Carse of Stirling, and regarded as the contemporary equivalents of similar antler tools from the shell-mounds of the Ertebølle culture (Period III).[2]

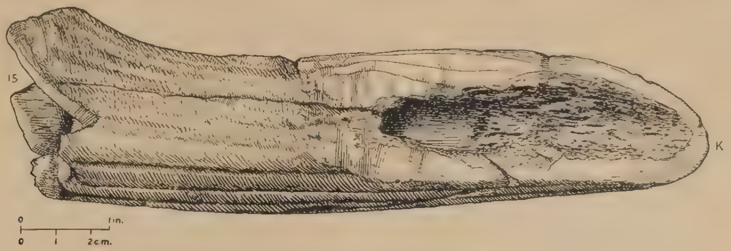


Fig. 8. Risga: antler implement. (*Kelvingrove Museum.*)

Considering the foregoing, one is compelled to take into account also a perforated tool of red deer antler from Oronsay and now in the Hunterian Museum, Glasgow. It closely resembles the oft-cited specimen from the Forth valley carse-clays at Meiklewood, west of Stirling.[3] The object (no. 15) preserved in Glasgow may be compared also with a heavy wedge-like antler tool[4] and with fragments of perforated implements of deer-horn definitely reported from Caisteal-nan-Gillean shell-mound.[5] Similar examples from Druimvargie Cave, Oban, have been described.[6] All these help to link more closely the island and coastal cave industries, and they indicate that Scandinavian Mesolithic traditions reached the region.

The piece of antler, fig. 9, no. 17, is illustrated as one of many roughly shaped by short flaking along a transverse edge. Treated in the same way as stone or bone, it was doubtless meant for scraping.

In the Kelvingrove Museum there are fragments of barbed bone points from Risga, none betraying signs of mineralization. Enough survives of a tip, no. 18, and of an imperforate butt, no. 19, to indicate that when whole these pieces of fishing-gear were the counterparts of some of the barbed bone points which have made classic the provincial culture represented in the caves of Oban and in the shell-heaps of Oronsay. Fashioned in the same style, the bone point, no. 20, with a side extended as a barb, is exceptional, although short bone points with one barb disposed alternately on each side with a rounded imperforate base are recorded from MacArthur's Cave, Oban.[7]

---

[1] A. Henderson Bishop, *op. cit.*, 1913–14, pp. 98–9; H. Breuil, *op. cit.*, 1921–2, p. 271, and fig. 6.

[2] *Supra*, p. 107.

[3] Robt. Munro, *Prehistoric Scotland*, Edinburgh, 1899, pp. 57–8, and fig. 18.

[4] H. Breuil, *op. cit.*, 1921–2, p. 271, and fig. 6.

[5] Joseph Anderson, *op. cit.*, 1897–8, p. 309.

[6] *Ibid.*, p. 302.

[7] Joseph Anderson, *op. cit.*, 1894–5, p. 224, and fig. 13. He has suggested (*loc. cit.*) that this and another example may have been broken from longer implements, and that the damaged lower part was rounded off.

Stress has frequently been laid on the Azilian facies of many barbed points from Oban and Oronsay, despite the fact that these are straighter and their faces more convex than is the case with true Azilian points from classic French sites. But in a few specimens from shell-mounds on Oronsay, having a single or double row of barbs,[1] the jags stand out like thorns. As the Abbé H. Breuil[2] and Professor V. Gordon Childe[3] have pointed out, these implements are unmistakably of Baltic aspect. This likeness to Danish types of the Early Atlantic climatic phase is heightened by the fact that the Scottish examples are made in bone and not antler.

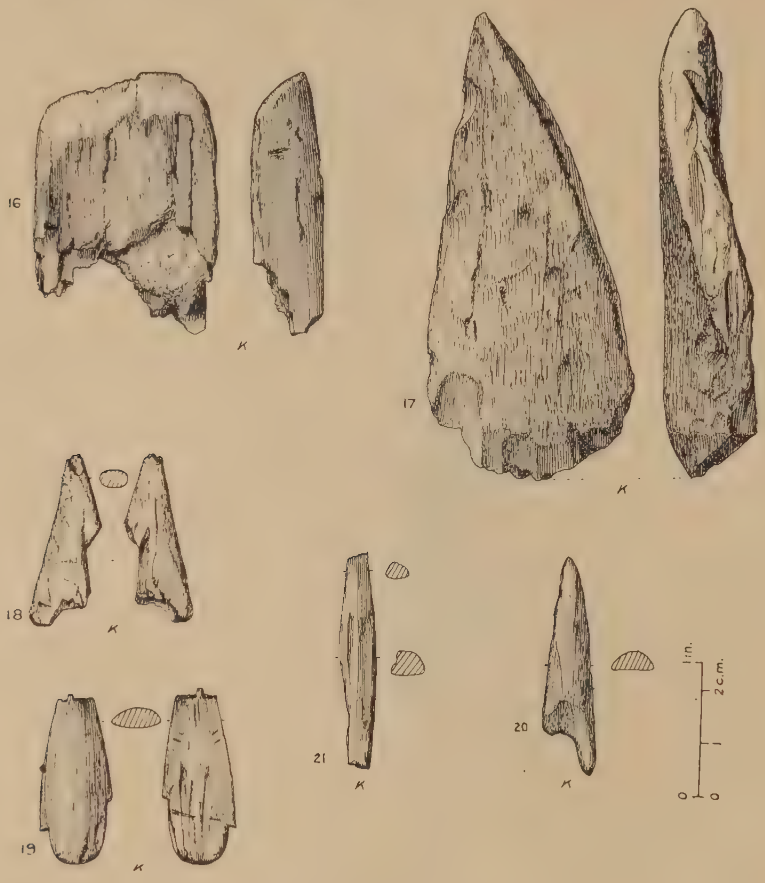


FIG. 9. Risga bone and antler industry: Nos. 16–17, antler; Nos. 18–21, bone. (*All in Kelvingrove Museum.*)

Among small objects of bone, pins, awls, and the like, manufactured on Risga, as on Oronsay and at Oban, a finely made but now defective specimen, no. 21, is remarkable. Grooved alternately near the pointed end and in the bulging shank, it seems to be an armature for tipping a shaft rather than an accessory of clothing or personal adornment. That this was as fashionable among the Risga squatters as among other communities living in the same stage of culture is suggested by the discovery at all their stations of many small perforated shells and pieces of red and brown raddle.

---

[1] Conveniently summarized by Movius, *op. cit.*, 1942, p. 185, and fig. 39, nos. 2, 3, and 9.

[2] *Op. cit.*, 1921–2, p. 261.

[3] 'The Forest Cultures of Northern Europe: A Study in Evolution and Diffusion', in *Journ. Roy. Anthr. Inst.*, vol. lxi, 1931, p. 333.

Improvised Tools of Stone

There have been recovered from the refuse finger-like pebbles of schist and slaty-blue stone, averaging 10 cm. in length, and abraded to a blunt edge or rounded tip, usually at one end only. At first sight these stones might be thought the counterparts of the bone and antler improvised tools (fig. 7, nos. 1–8) discussed above. Inspection shows, however, that, whereas some of the utilized stones are the analogues of these implements, the majority are worn differently. They are also quite distinct from the crudely sharpened and often much edge-injured pebbles, flakes, and pieces of stone found at these sites. Occasionally the worn part is accompanied by slight flaking backward from the used end. A typical specimen, abraded at both extremities, is illustrated, fig. 10, no. 1. Hundreds of exactly similar objects have been retrieved from the shell-mounds of Oronsay and many from the Oban caves. With these the tapering quartz end-worn rods from Morar[1] may reasonably be bracketed (fig. 10, no. 2). Among the many suggestions advanced regarding their purpose, the most plausible is that put forward by Mr. Symington Grieve.[2] It is that the prehistoric people[3] used these as

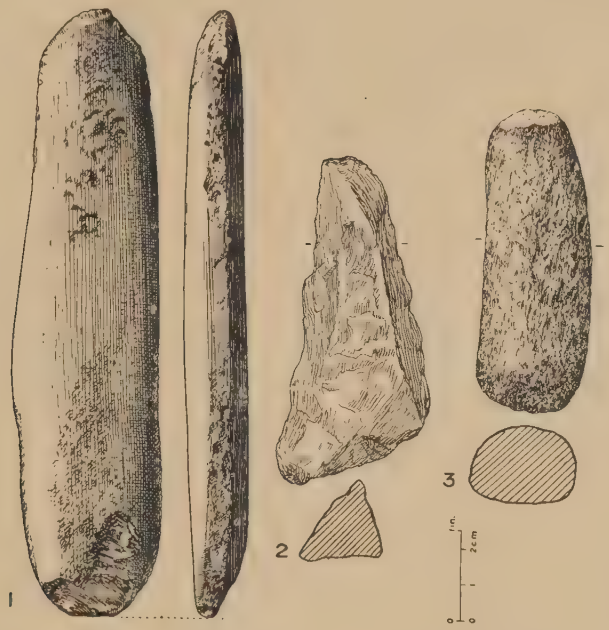


FIG. 10. 'Limpet hammers': No. 1, Risga (*Kelvingrove Museum*); No. 2, Morar; No. 3, modern.

---

[1] *Supra*, pp. 120–2.

[2] *Op. cit.*, 1885, p. 57.

[3] Comparable examples have been noted at prehistoric coastal sites outside Scotland. For instance, in south-west Pembrokeshire they have been found with the products of a flaked-stone industry which includes crude choppers and a suite of other tools very similar to those manufactured at Risga and places referred to in this communication. See T. C. Cantrill's 'Flint Chipping-floors in south-west Pembrokeshire', in *Arch. Cambr.*, 6th series, vol. xv, 1915, pp. 157–210, *passim*.

do modern fishers in these parts, who when collecting bait employ similar stones to knock limpets off the rocks. The present author may mention that this is supported by his own tests with schistose pebbles, e.g. fig. 10, no. 3, and quartz rods. Moreover, in these experiments many of the shells came to be holed in the same way as are countless limpet-shells from the food-refuse.

Hammer-stones from Risga, which do not differ from specimens recovered at other places mentioned in this paper, are bruised mainly from their having been used to flake stone. Unwrought and unabraded, long massive stones, found among the refuse, may have been used to club such slow-moving creatures as seals and garefowls. Large burnt stones and charred animal bones leave no room for speculation, however, for they proclaim that the communities knew and used fire for roasting their meat.

THE AGE OF THE OBANIAN CULTURE

A. At the outset it has to be said that there is a great difference in age between the Obanian industries and the Larnian recovered from the deposits of the Early Post-Glacial, or so-called 25-ft., raised beach of the Firth of Clyde. Most of these relics of the Larnian culture, which was developed along the coasts of the North Channel, occur in secondary position. They originate from sites occupied on the low grounds and shore towards the end of the emergence of Boreal times, and while the Early Post-Glacial sea was dominant during the subsequent Atlantic climatic phase.[1] These strand-loopers' relics were incorporated into the beach formation during this period of submergence and as the land recovered thereafter.

B. At Oban the top of the Early Post-Glacial raised beach stands fully 30 ft. above and 100 yards behind the present one. The remains of occupation from the Oban caves which open on the old beach cannot be anterior to Late Atlantic times (*c*. 3000–2500 B.C.). The refuse could have accumulated only *after* the re-elevation of the land had begun. Even if man had reached the region before this, say, during the period of submergence, he could not have inhabited the caves, because their forming would then be continuing when they would, of course, be subject to the full influx of the sea. Yet, this could not have receded far during the early part of the occupation, since the lowest layers of refuse in MacArthur's Cave were found to be intercalated between shingle from a secondary storm beach.[2]

---

[1] Because of the aspect of its bone and antler implements the Obanian industry has often been described as Azilian. It has even been suggested that this industry of the Scottish seaboard is of Azilian age. But it is only fair to remember that the late Professor James Geikie long ago recognized that a prolonged period separated the Pyrenean post-Upper Palaeolithic culture from the Oban industry (*The Antiquity of Man in Europe*, Edinburgh, 1914, p. 298). For he assigned the former to his 'Lower Forestian' climatic epoch and the latter to his 'Upper Turbarian', respectively the Boreal and Atlantic climatic phases. The accuracy of this ascription of the full Azilian culture is now proved. It has therefore to be conceded that elements of this facies could have reached Argyll by Late Atlantic times. But against this is the fact that the known diffusion of the Azilian culture does not comprise northern France. Actually its distribution in that country corresponds almost exactly to that of the parent Late Magdalenian. Moreover, owing to the probable limits of the territory reclaimed from the Channel and the north-easterly situation of the land-bridge during the Boreal emergence, it is more than doubtful if Azilian strains penetrated into Britain: for here only the Early Magdalenian has left the slightest trace.

[2] Joseph Anderson, *op. cit.*, 1894–5, pp. 228–30.

C. The situation and composition of the Oronsay shell-heaps shows that these belong to the period of land-recovery following the regression of the Early Post-Glacial sea. All of them lie from 22 to 24 ft. above O.D. along or upon the beach which registers the maximum of the marine transgression, or upon rock weathered after being raised above the reach of the waves. The character of the intercalated materials indicates that winds and storms, and not the sea, were responsible for depositing the sand and shingle which interrupt the refuse beds.[1]

D. From its lie the Risga midden, too, is assignable to the period of uplift which succeeded the Early Post-Glacial submergence. At this juncture, however, the time of its accumulation cannot be precised. But since the refuse of Risga comprises no beach materials to indicate disturbance by the sea, it is inferred that the land had recovered considerably before the islet in Loch Sunart came to be a resort of food-collectors.

E. Apart from the foregoing, the remote situation of these localities makes it certain that they could only have been reached very long after the first Larnian colonists had alighted on the shores of the Firth of Clyde. Even by navigation the northward advance of the successors of the primordial settlers must have been slow indeed along the indented coast. In the course of this progress various cultural strains, which had entered Scotland during the Atlantic climatic phase, including those from the other side of the country, were absorbed in the industries of the migrants. Naturally, local facies of a provincial littoral culture would evolve in response to the environment of the communities. Such is the hybrid stone and bone industry represented in the assemblages from Oban, Oronsay, and Risga. That from the last-named site differs from the Oban and Oronsay facies only by its strong element of flaked and retouched artifacts of stone. This crucial complement now permits us better to assess the Obanian culture, and to trace its influences beyond the place made classic by the first and rich discoveries. Since Tardenoisian and Baltic tinges appear in the industries associated with the Early Post-Glacial raised beach of south-west Scotland, it is highly probable that with the Larnian tradition they were carried northward along the coast. Possibly some Baltic influences also gained the west by routes in the interior. For certain flaked stone implements from Glen Finlas and Inchlonaig in Luss parish, Loch Lomond,[2] suggest that Baltic traditions passed westward from the Forth valley.[3]

The fact that the Risga assemblage includes forms like Late Larnian is not so remarkable as the presence therein of types resembling tools of the littoral Early Neolithic developed on the provincial Mesolithic and reinforced by foreign elements towards the beginning of the Sub-Boreal climatic phase (*c*. 2500 B.C.). Of course, they do not prove any connexion between the full Obanian of Risga, but would point to somewhat parallel developments in response to local requirements. When researches are extended, it may well be established that the outposts of the Oban culture, at least north of the type-station, are referable to this phase of the Post-Glacial period. Already to the stratigraphy and geographical considerations which indicate that the Oban caves and Isle of Oronsay were occupied earlier than Risga, archaeological evidence can be added to show that the traditions of this regional culture long endured.

---

[1] Symington Grieve, *The Book of Colonsay and Oronsay*, Edinburgh, 1923, vol. i, pp. 42–4. Cf. A. Henderson Bishop, *op. cit.*, 1913–14, p. 64 ff.

[2] A. D. Lacaille, 'Some Scottish Core-tools and Ground-flaked Implements of Stone', in *Proc. Soc. Ant. Scot.*, vol. lxxiv, 1939–40, pp. 6–8 and fig. 1, nos. 4 and 5.

[3] During the Atlantic climatic phase the upper reaches of the Forth would probably be fenlands within a few miles of the lower valley of the Endrick Water, a feeder of Loch Lomond.

It is thought that the foregoing makes it clear that on the Atlantic seaboard of Scotland the Obanian culture did not replace the Larnian,[1] but was a regional development of it. It belongs to the Mesolithic complex of the British Isles. For, from its beginnings in the Atlantic climatic phase onward its food-gathering exponents practised an Old Stone Age economy. The situation and character of some of their industries demonstrate the long persistence of Obanian culture. In the case of Risga particularly, contemporaneity is indicated with the early Epimesolithic industries recovered from the humus overlying the Early Post-Glacial raised beach in north-east Ireland and south-west Scotland, and therefore with the full but probably short-lived English Neolithic.

Cup-and-ring markings, such as are usually assigned to the Bronze Age, occur on a rock-outcrop on Risga. But they can no more be ascribed meantime to true Obanian kitchen-midden folk than the pottery and human bones from the uppermost beds in caves and other openings at the name-site of the regional culture. The sculpturings, potsherds, and bones point to a later resort to sites first tenanted by settlers in a stage of Mesolithic cultural development. The petroglyphs are probably contemporary with the stone circle Greadal Fhinn near Kilchoan, on the mainland 8 miles west of Risga. This setting may in turn be related to some discoveries made by Mr. T. C. Lethbridge, F.S.A., on the coast of the Ardnamurchan peninsula. These and other littoral finds have to be considered briefly for the evidences they afford of man's northward progress.

STONE INDUSTRIES FROM THE COAST OF ARDNAMURCHAN

Sanna Bay. At Sanna Bay, 2 miles north-east of Ardnamurchan Point, Mr. Lethbridge found a cremation burial and shell-midden, resting upon a former land-surface in the sand-hills.[2] At this, the westernmost prehistoric site on the mainland of Great Britain, two occupation layers were exposed in one of the accumulations. On the surface of the upper stratum he picked up some bronze objects and pieces of coarse ware of the kind commonly made until recently in the Hebrides. From the lower deposit there were taken fragments of ornamented Beaker ware (fig. 11, no. 1), flakes of buchite and flint, some well-made flint implements including a flatly retouched knife, no. 2, a compound scraper, no. 3, two basalt axe-heads, nos. 5 and 6, one unfinished and broken, the other showing the influence of metal types.

Examination of this group, now in the University Museum of Archaeology and Ethnology, Cambridge, discloses the presence of other noteworthy specimens which, however, were not mentioned specifically in the report on the site. In the light of more knowledge of the West Highland stone industries, attention is drawn to two. One is a tip-end micro-burin, no. 7, its characteristic facet and notch partly worked down, and one long edge steeply blunted, the other showing surface wear. This instance of the treatment of a by-product stands alone. It suggests that, since flint may not have been easily obtained, even waste was pressed into service. The others, a sliced flint nodule brought to a sharp point and long working-edge, and combining in itself a perforator and a steep side-scraper, no. 8, and the flint core, no. 9, would be in place in an Obanian or Larnian series.

---

[1] Cf. C. F. C. Hawkes, review of H. L. Movius's *Irish Stone Age* in *Nature*, 3831, 3rd April 1943, p. 377.

[2] *Op. cit.*, 1927.

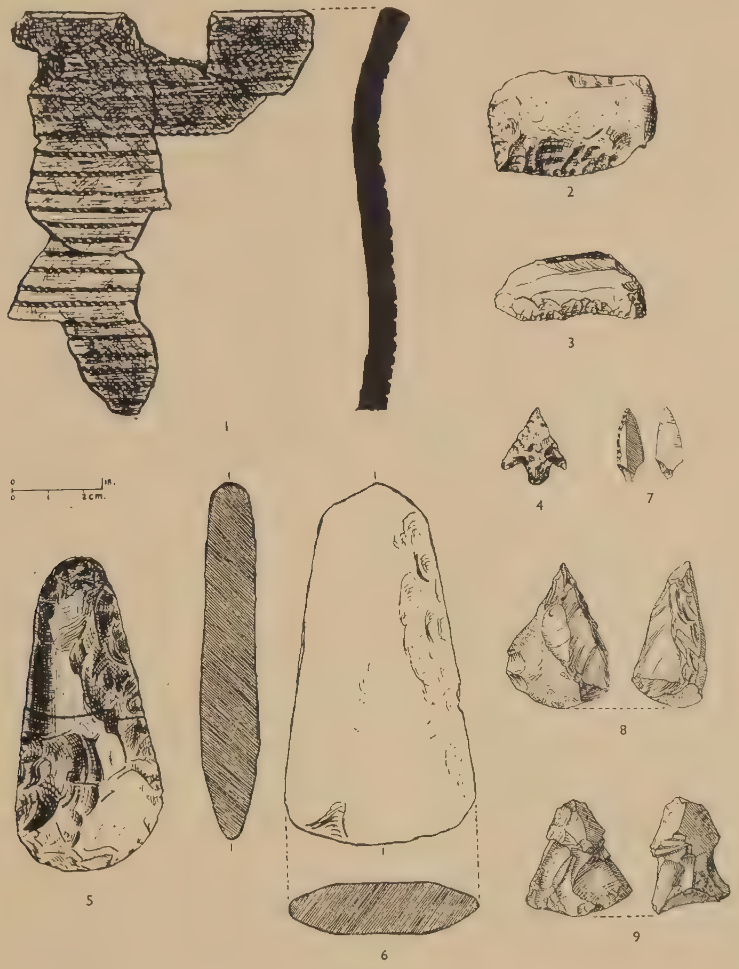


Fig. 11. Sanna Bay industry. (Nos. 1–6 after Lethbridge.)

Cul na Croise. Eleven miles east of Sanna Bay, sites on bays around the unnamed indented bight in north-east Ardnamurchan have yielded assemblages of stone implements. At one,[1] in sand-dunes behind a small bay Cul na Croise, 2 furlongs from

---

[1] Called Gorten Bay by Mr. Lethbridge in *Proc. Soc. Ant. Scot.*, vol. lix, 1924–5, pp. 105–8. In his paper, 'Battle Site in Gorten Bay, Kentra, Ardnamurchan', he describes small medieval relics, presumably of battles, on the shores of Cul na Croise and of another bay to the north-west. He only touches upon the prehistoric remains.

Sgeir a' Caolais,[1] just south of the entrance to the sound into the deeply penetrating bay of Kentra, our Fellow collected potsherds, artifacts of flint and other stones, including leaf-shaped and barbed-and-tanged arrow-heads, minute round scrapers and small pointed blades retouched in microlithic style, including some Tardenoisian types. The finder's opinion that the industry belonged to the Beaker complex, and could therefore be linked with the lower deposit at Sanna Bay, is supported by comparable discoveries from sandy areas, not only in other parts of Scotland but also in the immediate neighbourhood.

Since the group from Cul na Croise certainly represents an extension of the older facies of Sanna Bay, one is compelled to ask when Bronze Age culture reached the Rough Bounds of the West Highlands, and where the early metal age folk came into contact with exponents of more primitive industries. These questions become significant in face of a large mixed collection of stone artifacts from this area.

Drynan Bay. On top of the raised beach behind Drynan Bay, a quarter of a mile south by west of Cul na Croise, the discovery of a most prolific industry has rewarded Dr. Munro's patient search. The collection he has amassed, though mainly of quartz artifacts, comprises a surprisingly large number of flints and a few tools flaked in green quartzite.

This series is important for its mixture of elements and as a link between Risga and Morar. It is composed of all the salient quartz forms met with in the industry from that island and from the mainland site in Morar. Indeed, so similar are the quartz artifacts of Drynan Bay and Morar that illustrations of representative lots from either place could serve as typological guides to the industries of both stations. Besides a great variety of flakes with a fair sprinkling of blades, worn from use or retouched along convenient margins, and common scraper forms, this assemblage includes crude axe-like tools brought to an edge by bold flaking. These fall into the same category as the rough pebble- and flake-tools in the Obanian industries of Oronsay and Risga, and in the Morar set. Variants in the shape of heavy choppers, resembling those of the Scottish Obanian and Irish Late Larnian, are fairly frequent also. A particularly fine example manufactured from a cobble of green quartzite can be singled out (fig. 12, no. 1). This type, already noticed at Morar,[2] seems to have been much favoured at sites on the coast and islands in the west and north-west of Scotland. Heavy scrapers also formed from pebbles, e.g. no. 2, were made in Late Larnian style at Drynan Bay.

Pick-like tools, improvised or flaked to a working-end in rods and plunging flakes of quartz, as no. 3, serve further to show that the settlers here had needs similar to those of the Larnians on the shores of the North Channel. Their true picks have to be distinguished from short, narrow objects worn to a round or bevel, like those which modern analogy suggests were employed as limpet-hammers.

The flint knapped at Drynan Bay is of much better quality than that which served the Risga food-collectors. Not only did it permit of the manufacture of fine implements, but it allows us to-day to recognize the typology of the products.

The flints (fig. 13) include an array of utilized and trimmed flakes. One, no. 1,

---

[1] i.e. the Skerry in the Kyle (Sound or Strait).

[2] *Supra*, p. 113, and pl. xxv, no. 24.

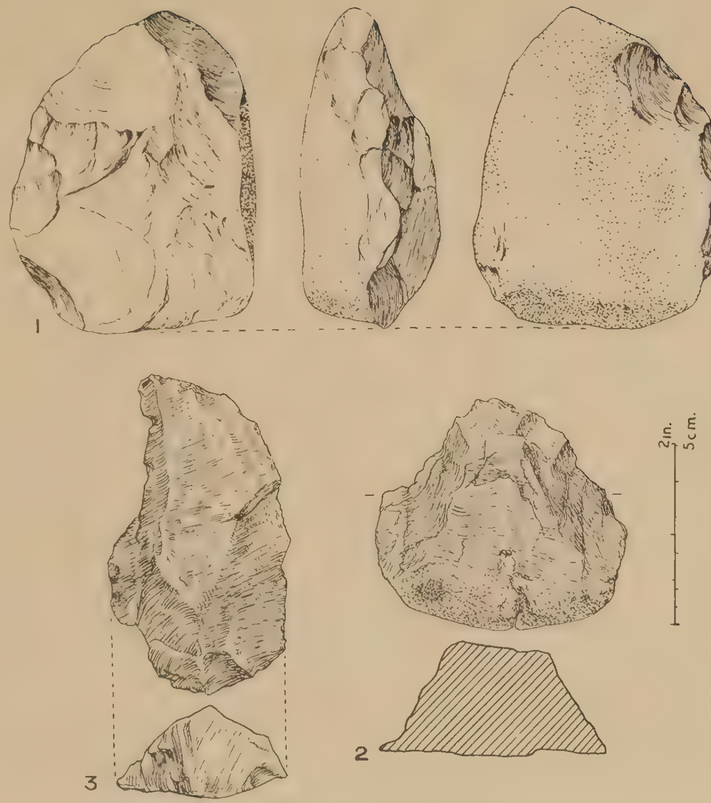


FIG. 12. Drynan Bay stone industry: No. 1, quartzite; Nos. 2–3, quartz.

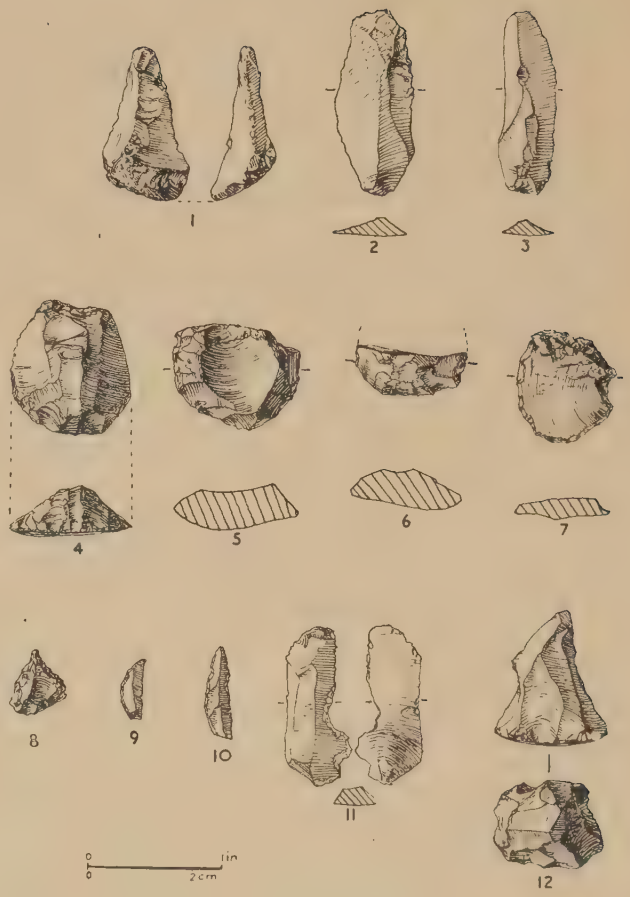

1
2
3
4
5
6
7
8
9
10
11
12
0
0
1in
2cm

FIG. 13. Drynan Bay flint industry.

plunging and slightly retouched and worn at the bulbar end, is a small replica of the classic Larne pick which abounds in the littoral Mesolithic industries of north-east Ireland, but which is only sparingly represented in south-west Scotland. It bears close comparison with the much larger quartz specimen, fig. 12, no. 3 (above).

Parallel-sided (e.g. nos. 2–3) and leaf-shaped blades are present to recall the best traditions of extraction from the core.

Some fairly steep scrapers are trimmed by rather bold, narrow flaking on pieces and flakes. A good example, no. 4, treated in the same way as several Obanian and Late Larnian specimens, and like one or two from Morar, is noteworthy for its archaic appearance. Such objects contrast with the flint scrapers which seem to have been more commonly made in the Drynan Bay industry. These are roundish and bear the fine characteristic running retouches of Scottish Bronze Age workmanship. The drawings of a typical example, no. 5, and of a fragment, no. 6, make additional comment unnecessary.

The trimming of the full round working-edge of a small scraper, no. 7, made in a flake sliced from a pebble differs markedly from that of its rude quartz and fine flint companions. It is of the same and almost steep microlithic character as the close dressing which appears on the three margins of a small triangular flake brought to an offset point, no. 8.[1] Even finer is the work seen on many diminutive forms. Two segments, of which the arc is blunted, nos. 9 and 10, suffice to show that true Tardenoisian shapes were manufactured besides Larnian and Obanian types. From the smaller the bulb of percussion has been removed; the larger comprises the upper end of a blade cut by micro-burin technique. No micro-burin can be illustrated from here, but proof that the specialized Tardenoisian method served is supplied by a blade notched preparatively for cutting (no. 11).

Dr. Munro has found small cores typical of an industry which produced well-developed microlithic forms. A single-platform example is figured (no. 12).

From the foregoing it is plain that the Drynan Bay collection certainly represents a homogeneous industry. This is in keeping with what has been observed at several coastal sandy sites in Scotland. Thus, at Shewalton, Ayrshire,[2] there have been found a tanged arrow-head edge-blunted in microlithic style together with ordinary bifacially flaked leaf-shaped forms, and microliths, non-geometric and geometric. Kindred discoveries are recorded from Ballantrae in the same county.[3] And it is believed that the Culbin Sands, Moray, furnish a parallel to the instances from the Atlantic seaboard. Reference need not be made to others which have come to the author's notice, for the series from the site at Cul na Croise next to Drynan Bay is sufficient to confirm ascription of the stone industries of north-east Ardnamurchan to a period not earlier than the Bronze Age. The exponents of these, however, continued the Mesolithic food-collecting habit as would be expected in this remote region, and as is attested, notably at Drynan Bay, by artifacts of Obanian and ancestral Larnian facies.

---

[1] Cf. the small trimmed flint blade from Morar, fig. 3, no. 6, and p. 114, *supra*.

[2] A. D. Lacaille, 'Mesolithic Implements from Ayrshire', in *Proc. Soc. Ant. Scot.*, vol. lxiv, 1929–30, pp. 44–5, and examples in fig. 2.

[3] A. D. Lacaille, *op. cit.*, 1944–5, pp. 100–4, and examples in fig. 5.

It seems, therefore, that the regional hybrid stone industries afford at least a partial answer to the questions relating to the coming together of exponents of Mesolithic and later cultures in this part of Scotland. The absorptions could not, of course, have taken place before the Sub-Boreal climatic phase was already well advanced. For, as has been seen, the full Obanian of Risga, from which so many elements in the industries of north-east Ardnamurchan and Morar are derived, can hardly be much earlier. Where actual contact first occurred cannot yet be determined, but the collection from Drynan Bay shows clearly that it did in fact take place on the great peninsula. It cannot be doubted that on the coast of this, with its caves and innumerable sheltered coves and bays, there must exist similar industries of strand-loopers and boating folk pushing northward. Future researches, carried back towards Risga, may provide the solution.

Head of Kentra Bay. During a recent stay in north-east Ardnamurchan Dr. Munro found relics of a flint and quartz industry below a wooded bank, significantly named Bruach na Maorach,[1] between Arevegaig on the east and Gortencorn on the west, at the head of Kentra Bay. More will have to be recovered from here before the industry can be fully appraised. It seems, however, to be similar to that of Drynan Bay, two miles to the north-west, and its run of products to accord with the standards of the Morar stone industry. A selection of the most noteworthy flints is figured (fig. 14). It includes two small patinated core-scrapers of Mesolithic facies, one conical, no. 1; the other irregular, no. 2; a parallel-sided flake struck from a well-prepared core, no. 3; and a small scaled pebble-core, no. 4, of a type particularly common in Larnian and Obanian assemblages from western Scottish sites where good flint was not readily obtainable. Some of the worked quartzes from here may eventually prove important as dating factors, since they were extracted from a bed of peat broached for improvements to a service track. Among the smaller forms, no. 5, a scraper, and no. 6, a fine flake, stand out. Coarse, heavy scrapers recall Late Larnian types, e.g. no. 7.

The pollen-analysis of samples of the peat forming the deposit, and adhering to a tool, may fix the age of the bed within certain limits when more light has been shed on the imperfectly known forest history of the region. Dr. H. Godwin, F.R.S., of the Sub-department of Botany School, Quaternary Research, Cambridge, has kindly given the following report[2] on (A) Peat from site, and (B) Peat from surface of quartz artifact.

> The accompanying table gives the result of pollen analysis from the two samples. Little is to be learned from them, although it is evident that the deposit, containing substantial amounts of alder, must be post-Boreal in age. Clearly birch was very abundant but this is characteristic of the north and west of Scotland over very long periods, as may be seen by comparing Erdtman's pollen diagrams for Inveroran, Argyll.
>
> The pollen of *Scabiosa*, *Armeria* and *Plantago*, not to mention the high percentages of *Calluna* tetrads, indicates that conditions were far from closed woodland (at any rate locally), and this is in conformity with the frequent sweet-gale (*Myrica*) pollen. This latter is difficult to separate fully from the hazel pollen.
>
> A single grain of *Lonicera* (honeysuckle) may be noted.

---

[1] The Shell-fish Bank.

[2] It is interesting to observe that this report is the first of the kind to be published in connexion with a stone industry from a Scottish site.

It is possible that when there is a much closer network of west Scottish diagrams, these results may be fitted to some definite horizon in them.

	Tree-pollen					*Non-tree pollen and spores*																		
A. AREVEGAIG PEAT, and B. QUARTZ ARTIFACT SAMPLES	*Betula*	*Pinus*	*Quercus*	*Ulmus*	*Alnus*	*Corylus*	*Salix*	*Gramineae*	*Myrica*	*Calluna*	*Polypodium*	*Filicales*	*Spores*	*Scabiosa*	Cf. *vaccinium*	*Plantago*, cf. *media*	*Polygonum*, cf. *persicaria*	*Nymphaea*, cf. *alba* or *occidentalis*	*Compositae*	*Armeria*	*Lonicera*
Total Count 150	135	+	..	..	15	69	..	13	46	219	1	3	..	2	1	..	..	..	1	..	..
A.	90	..	..	..	10	46	..	8	30	142	3	2	..	13	3	..	..	..	3	..	..
Total Count 150	134	3	2?	1	20	17	..	3	34	98	11	3	1	+	+	+	+	+	1	1	1
B.	90	2	..	3	14	12	..	2	22	66	8	2	..	..	..	..	..	..	..	..	..

(*Pollen count by Miss R. Andrew.*)

STONE INDUSTRIES FROM THE ISLES

Series of stone artifacts akin to those from the north coast of Ardnamurchan have been found on several islands in the western waters. They prove the wide distribution of food-collecting folk by migratory movements which, emanating from the mainland, were the counterparts of those commemorated by the coastal industries of the Rough Bounds. A few instances only need to be mentioned in testimony of this diffusion.

Coll, Kerrera, and Colonsay. Mr. Lethbridge tells me[1] that he has found a microlith at Hogh Bay on the west side of the Inner Hebridean Isle of Coll lying in the same latitude as Risga, and about 12 miles west of Ardnamurchan Point. Also, from a thin occupation layer in the same locality in a bay between Ben Foill and Arileod he recovered a small graver-like flint implement, a flatly trimmed scraper made on a small flake, and sherds of Beaker ware.

Much farther south the same archaeologist discovered a microlith associated with potsherds on the Isle of Kerrera in Loch Linnhe, opposite Oban.

By far the largest group is that gathered from an old land-surface in sand at Balnahard, Colonsay, the island adjacent to Oronsay, 15 miles south of Mull. Regarded as Late Neolithic by the finders,[2] the lot includes a barbed-and-tanged arrow-head, axe-heads, blades, a small trimmed Larne pick, small cores, also elongated shingle stones with ends rubbed down, or broken from forceful use, and similar to the utilized narrow pebbles and rods from Oban, Oronsay and Risga, Drynan Bay and Morar.[3] Thus, in its products of a flake and blade industry, this assemblage shows close

---

[1] In letter, Cambridge, 9th December, 1947.

[2] W. B. Wright and A. M. Peach, 'The Neolithic Remains of Colonsay, in the Western Isles of Scotland', in *Geol. Mag.* 562 (vol. viii, no. iv), April 1911, pp. 164–75.

[3] *Supra*, pp. 125–6.

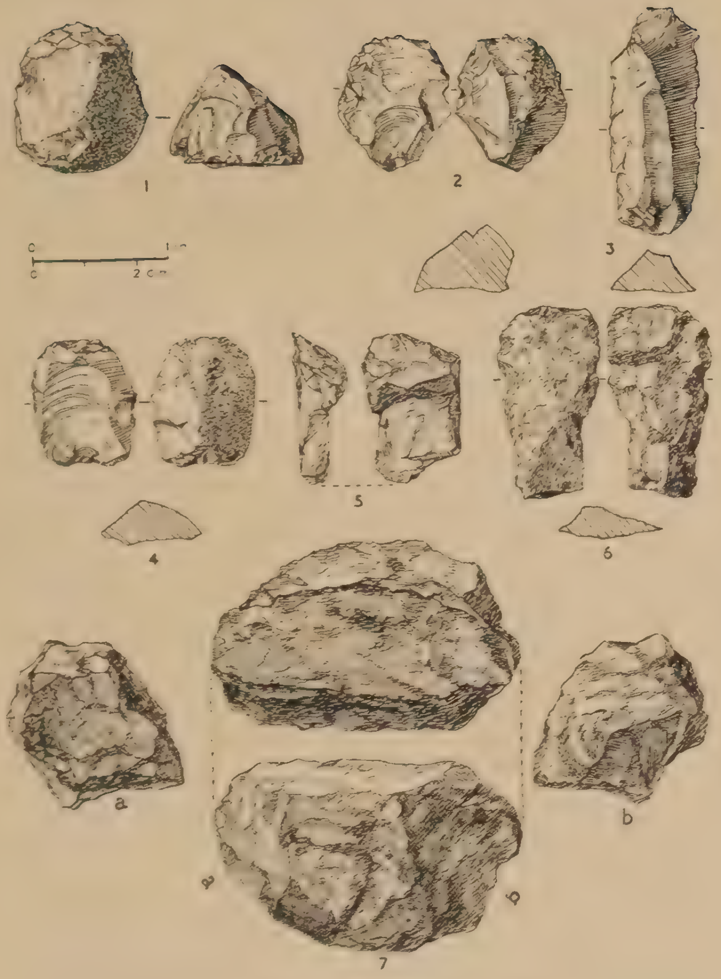

1
2
3
0 1 in
0 2 cm
4
5
6
a
b
a
b
7

FIG. 14. Bruach na Maorach stone industry: Nos. 1–4, flint; Nos. 5–7, quartz.

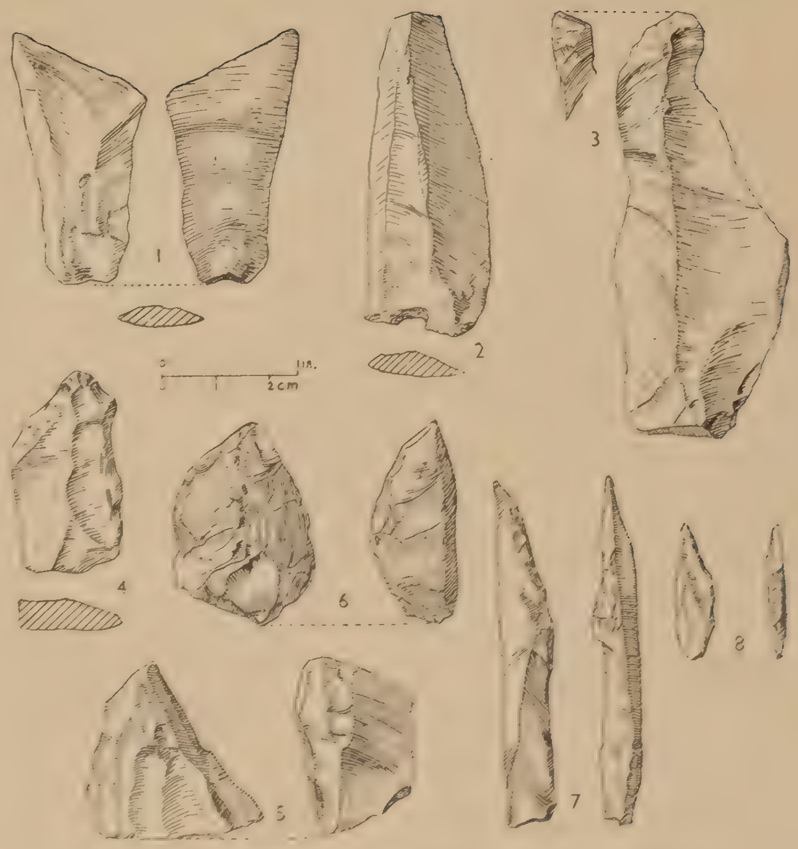

1
2
3
0 1 in.
0 1 2 cm
4
6
5
7
8

FIG. 15. Buchite industry from Tote, Skeabost, Isle of Skye.

identity with the Ardnamurchan series which are more advanced than the Obanian industry of Risga.

Save for the possibility that the pottery accompanying the Kerrera flints might be of a type earlier than Beaker,[1] none of these finds suggests any connexion with the Megalithic people.

South Uist. Products of a flint industry are known from the west coast of South Uist in the Outer Hebrides. They include objects found at Daliburgh by Mr. Lethbridge, among them barbed-and-tanged arrow-heads and diminutive scrapers. These tools exhibit different styles of retouch, such as a well-developed trimming recalling Bronze Age work, also flat minute dressing resembling that applied to the tiny blade from Morar described in an early section.[2] That this industry must be relatively very late would appear not only from the remoteness of the place where it occurs, but also from the generally atypical facies of its products. The island may not have been reached by a direct 40-mile sea-passage from the mainland, but rather as the culmination of a slow process of hugging coasts which offered the shelter of bays and caves, and which provided abundant subsistence.

Skye. No stone industry has so far been recorded from the mainland shores north of Rudha'n Achaidh Mhòir[3] or from the east side of the Isle of Skye to suggest how the elements of coastal culture gained the Outer Isles. However, on the west side, in a cave excavated by Sir Lindsay Scott, F.S.A., at Rudh'an Dunain, a poor industry using bloodstone from Rum, 10 miles to the east, and quartz has been revealed in successive Bronze Age layers, the most prolific also yielding Beaker ware.[4] One of these relic-beds may be correlated with the industry of Rudha'n Achaidh Mhòir in South Morar.

If hazardous, it is nevertheless tempting to see some connexion between the mainland and island industries in other series from Skye, and now in the University Museum of Archaeology and Ethnology, Cambridge. Got by Mr. Lethbridge from two Bronze Age cairns at Tote, Skeabost, at the head of Loch Snizort Beag, an inlet of the sea on the north coast, these clutches of buchite, or vitrified shale, artifacts are remarkable. Weathering has enhanced the archaic aspect they already owe to the character of their components, fig. 15. These include fairly large, fine blades and implements made thereon, as nos. 1–4, some retouched at the end or along one or more margins, as nos. 3 and 4, a few cores, e.g. nos. 5 and 6, one (no. 6) having apparently served as a scraper, a steeply dressed trimming-flake, no. 7, and a steeply blunted, simple microlithic form, no. 8, its parent blade conceivably cut by microburin technique.

Although the assemblages from the Isle of Skye may not be links between Morar and the Outer Hebrides, the nearest to Skye being North Uist, 15 miles westerly across the Little Minch, yet it must have been over this strait that the traditions of fine flaking and retouching stone were carried northerly to Harris and Lewis.

---

[1] T. C. Lethbridge, in *litt. cit. supra.*

[2] p. 114, and fig. 3, no. 6.

[3] The antiquity nearest Rudha'n Achaidh Mhòir is the lake-dwelling of Loch nan Eala in Arisaig (R. Munro, *Ancient Scottish Lake-dwellings*, Edinburgh, 1882, p. 52). Fractured quartzes reported from here cannot be regarded as implements. Between this manifestly late inland site and the coastal industries there exists no conceivable connexion.

[4] 'Excavation of Rudh 'an Dunain Cave, Skye', in *Proc. Soc. Ant. Scot.*, vol. lxviii, 1933–4, pp. 200 ff. J. G. D. Clark describes the stone industry, pp. 222–3, and fig. 1.

Lewis. So far as the writer knows, the most comprehensive stone industry from the 'Long Island' is one demonstrating the tenacity of these traditions. He has in mind artifacts from hut-circles believed to be of Broch Age at Valtos, Uig, on Loch Roag, an inlet of the sea on the west coast.[1] Here, with quantities of animal bones, mainly red deer, and shell-refuse, were found quite delicate flakes, blades, and a variety of well-made scrapers of tractable vein-quartz, besides coarse, heavy but skilfully flaked choppers and flakes struck in gneissose rocks. All these were associated with saddle-querns and bun-shaped rubbers, also sherds of characteristic ware, most ornamented, some with the impression of cereal grains.

The settlers at this Hebridean site seem not to have manufactured bone implements, but to have relied mainly on stone.[2] This is, of course, in keeping with what has been observed in the foregoing. For, apart from a few sawn, hacked, or scored pieces, no bone-work in the true sense has been found in the West Highland coastal industries, mainland or island, other than the full Obanian considered above. Despite differences in age, this serves in a way to connect the industries of all these remote stations, including that of Morar descended from the facies of north-east Ardnamurchan.

CONCLUSIONS

A. The quartz and flint industry of Rudha 'n Achaidh Mhòir in South Morar records the sojourns of strand-loopers who may have been making their way along the coast under pressure from more advanced people from the south. The industry, though not strictly datable, is the earliest evidence of man in this part of the West Highlands of Scotland. Its mode of occurrence and output indicate that it cannot be anterior to advanced Sub-Boreal times. The land then stood somewhat higher relative to the sea than now. Not before that had the sand-dunes developed sufficiently to add to that wind-shield which the extinct storm-beach of the Early Post-Glacial sea afforded making the old bay an attractive habitat. Behind there stretched an area free from dense forest-growth.

The parentage of the Morar industry lies in working-sites around Kentra Bay in north-east Ardnamurchan. This shows that in this region descendants of Obanian food-collectors practising a Mesolithic economy had some contacts with Bronze Age people. Copying some of the stone implement-forms of their more advanced congeners, whom one would associate with the Beaker stage of man's cultural development begun in the Sub-Boreal climatic phase, they added these to their basically Obanian equipment and its derivatives from the comprehensive Larnian of the south-west. The Morar industry therefore represents an extension in the Atlantic drainage of a simple littoral facies developed in Ardnamurchan.

---

[1] A. D. Lacaille, *op. cit.*, 1936–7, pp. 279–96.

[2] It is interesting that the artifact evidence afforded by the site at Valtos contrasts with that from the villages of earlier but culturally more advanced people at Skara Brae, Orkney, and Jarlshof, Shetland. At both northern settlements among the variety of stone tools few show the refinements of craftsmanship. On the other hand, the relics of the bone-work comprise well-defined forms which illustrate the survival of Baltic traditions. (V. G. Childe, *Scotland before the Scots*, London, 1946, p. 25.)

Even in a straight line across the water, a considerable distance separates Ardnamurchan from South Morar. Direct passage over a dangerous sea, however, is not envisaged, but only slow progress, probably by boat, along the coast. Indented as this is, many of the intermediate coves would be attractive to squatters whose relics survey should reveal.

B. The northward movement along the mainland coast commemorated by the Morar industry had westerly counterparts which bore Mesolithic stone-working traditions and later techniques to some of the inner isles. An extension of the first may eventually have carried by stages into some of the Outer Hebrides.

The industries of manifestly backward food-collecting communities, occurring behind bays in the Rough Bounds and on a few of the isles, belong to a low-culture complex that is well represented from Cornwall to the North Channel and the Firth of Clyde. Over this great stretch there were local but not necessarily synchronous variations. Such were the inclusion of reinforcing elements made in different traditions and in response to regional conditions and requirements. Particular interest attaches to the assimilations and contacts, which took place from Sub-Boreal times onward, evidenced along the western waters of Scotland, since these, as in Ulster, concern the long-persisting Mesolithic cultures developed mainly during the Atlantic climatic phase. In the Rough Bounds of the West Highlands the Obanian culture was involved.

C. So far as is known now, none of the strand-loopers' industries in the West Highland area proves contacts between the holders of Mesolithic traditions and Megalithic or more advanced Neolithic people. For, as in so many other parts, the links were with an early metal culture. This conforms with the view that the true Neolithic with its developed economy and new arts, which could not have thrived in such country as the Rough Bounds, was short-lived and localized in these islands. On the other hand, to small unenterprising societies the shores of that region, like those of the rest of the West Highland area, afforded ample subsistence obtainable with little effort. Despite their proven contacts with members of more advanced race, the primitives long endured in their simple economy in the west, contributing little or nothing to the culture of those who were laying down the foundations of civilization in Scotland. It is less remarkable that evidence of this persistence should appear at remote spots on islands on the outermost edge of north-western Europe than at Rudha'n Achaidh Mhòir in Morar. For this site and its industry, producing none of the developed tool-forms or other indicators of a standard higher than Mesolithic, exemplify admirably the long survival of Old Stone Age traditions, way of life, and methods even on the mainland in the Highland Zone of Great Britain.

ACKNOWLEDGEMENTS

Gratitude has first to be expressed to Dr. W. A. Munro for having, with his customary generosity, placed at the author's disposal all the relics amassed by him on the coasts of the West Highlands. To his son, Mr. John Munro, the writer is greatly obliged for sketch-plans, surveys, and measurements of tide-levels. For facilities to study material preserved in Glasgow, and for permission to illustrate representative series, he is deeply indebted to Sir Hector Hetherington, Principal of the University, as regards the collection in the Hunterian Museum, and to Dr. T. J. Honeyman, Director, in respect of those in the Kelvingrove Museum. He is grateful to Miss Anne S. Robertson for having gone far out of her way to help him in the first-named museum, and to Dr. R. G. Absalom, formerly Curator of Geology and Natural History, in the second, for assistance and identifying faunal remains. The author wishes to record his thanks to Mr. T. C. Lethbridge, F.S.A., for much first-hand information and for drawing his attention to West Highland assemblages in the University Museum of Archaeology and Ethnology, Cambridge, which were made available for inspection by the kindness of Dr. G. H. S. Bushnell, F.S.A.; to Dr. H. Godwin, F.R.S., of the Botany School, Cambridge, for the pollen table incorporated in the foregoing; to Dr. G. W. Tyrell, Department of Geology in the University of Glasgow, for petrological reports; to Lord Trent of Nottingham and to Mr. A. A. MacGregor, Bracknell, for the loan and use of photographs. It would be remiss indeed not to acknowledge that a grant kindly awarded in 1941 by the Trustees of the late Lord Leverhulme had permitted the writer to extend his researches in Scotland. Many of the results of these have proved of great value in the present interpretation.

Pictor in Carmine[1]

By the late M. R. JAMES, Esq., O.M., Litt.D., F.B.A., F.S.A.

THE treatise called *Pictor in Carmine* is notable as containing the largest known collection of types and antitypes intended to be used by artists. I have often called attention to it, and for many years have been on the look-out for its occurrence in manuscripts, in the hope that I might ultimately be able to produce an edition of the whole text. Whether that may yet see the light I do not know; it is a work of considerable bulk, and perhaps hardly merits a great expenditure of time and print, but comparatively few pages will suffice to give a conspectus of the contents and character of the book.

I will begin with a translation of the anonymous author's Preface, revised from one which I printed in 1890 in the *Transactions of the Cambridge Antiquarian Society* (vol. vii). The manuscripts on which my text is based are Nos. 300 and 217 in the library of Corpus Christi College, Cambridge, and 11050 of the Phillipps Collection at Cheltenham,[2] which was printed by Sir Thomas Phillipps in a catalogue issued at the Middle Hill Press, and reprinted by M. Delisle in his *Mélanges de Paléographie*, etc. (p. 206). I have myself collated the Cheltenham copy.

Struck with grief that in the sanctuary of God there should be foolish pictures, and what are rather misshapen monstrosities than ornaments, I wished if possible to occupy the minds and eyes of the faithful in a more comely and useful fashion. For since the eyes of our contemporaries are apt to be caught by a pleasure that is not only vain, but even profane, and since I did not think it would be easy to do away altogether with the meaningless paintings in churches, especially in cathedral and parish churches, where public stations take place, I think it an excusable concession that they should enjoy at least that class of pictures which, as being the books of the laity, can suggest divine things to the unlearned, and stir up the learned to the love of the scriptures.

For indeed—to touch but a few points out of many—which is more decent, which more profitable, to behold about the altar of God double-headed eagles, four lions with one and the same head, centaurs with quivers, headless men[3] grinning, the so-called "logical" chimaera,[4] the fabled intrigues of the fox and the cock, monkeys playing the pipe, and Boethius's ass and lyre;[5] or (surely) to contemplate the deeds of the Patriarchs, the rites of the Law, the deliverances wrought by the Judges, the symbolic acts of the Kings, the conflicts of the Prophets, the victories of the Maccabees, the works of the Lord the Saviour, and the revealed mysteries of the Gospel in its first splendour? Is the panorama of the Old and New Testaments so meagre that we must needs set aside what is comely and profitable, and, as the saying goes, make ducks and drakes of our money[6] in favour of ignoble fancies? Nay, but it is the criminal presumption of painters that has gradually introduced these sports of fantasy, which the church ought not to have countenanced so long—for it has certainly seemed to countenance what it has not ceased to tolerate with such culpable longsuffering. Therefore it is that, to curb the licence of painters, or rather to influence their work in churches where paintings are permitted, my pen has drawn up certain applications of events from the Old and New Testaments, with the addition in every case of a couple of verses which shortly explain the Old Testament subject and apply it to that of the New. These, at the request of certain persons, I have written out in chapters herewith; and the object of placing several couplets of verses under each heading is that what the shortness of one couplet does not suffice to explain in any case, the repetition in different words may supply in the same heading, giving the reader a satisfactory choice.

---

[1] An unpublished paper by the late Dr. Montague Rhodes James, O.M., sent by him in 1932 as a contribution to a *Festschrift* in honour of the sixtieth birthday of Prof. Dr. Arthur Haseloff, of Kiel. Owing to the conditions in Germany, the *Festschrift* was abandoned, and the paper remained in Dr. Haseloff's possession; it is now returned, by his courtesy, with a view to its publication in England. It has been seen through the press by our Fellow Dr. E. G. Millar.

[2] Now in the library of Mr. John Hely-Hutchinson, Chippenham Lodge, Ely, by whose kindness four of the pages are reproduced in pls. XXIII–XXVI. The Society has also to thank Mr. Hely-Hutchinson for the loan of the manuscript.

[3] Acephali, men with their faces in their chests.

[4] Not traced. The Scholiast on Hesiod, *Theog.* 322, says the chimaera represents the three parts of [illegible].

[5] Boeth. *Cons. Phil.* i. 4. The full proverb is ὄνος λύρας ἤκουε καὶ ὗς σάλπιγγος.

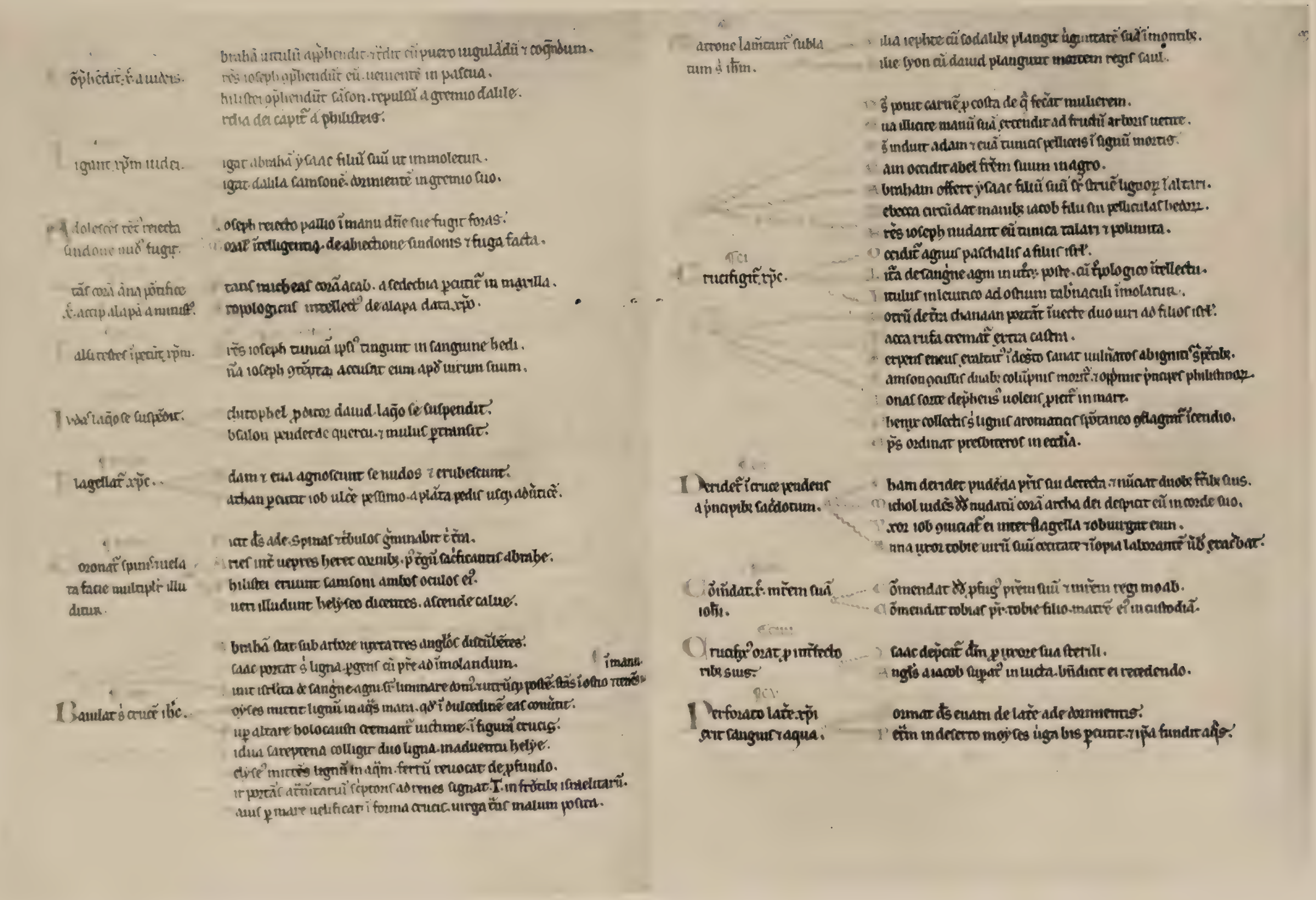
[6] [illegible]

These distichs are to be inscribed about the Old Testament incident, or about any other of mystical or typical application. For about the New Testament incident (as being of commoner occurrence and better known) it suffices to write merely the names of the personages. For the rest, it was not my business to arrange for those who supervise such matters, all that should be painted; let them look to it themselves as the fancy takes each, or as he abounds in his own sense, provided only that they seek Christ's glory, not their own: and so not only may He perfect praise out of the mouths of babes and sucklings, but even if these hold their peace, the stones may cry out, and a painted wall declare the wonderful works of God after a fashion. It has been my purpose to supplement the materials for the comely decoration already begun in many churches and to curb the faults of excessive levity by providing a supply of more excellent quality.

I append the Latin text as it stands in the MS. Corp. Chr. Coll. Camb. 300, supplemented, in the case of a few missing words, from the Phillipps MS. 11059. On these and the other manuscripts more will be said later.

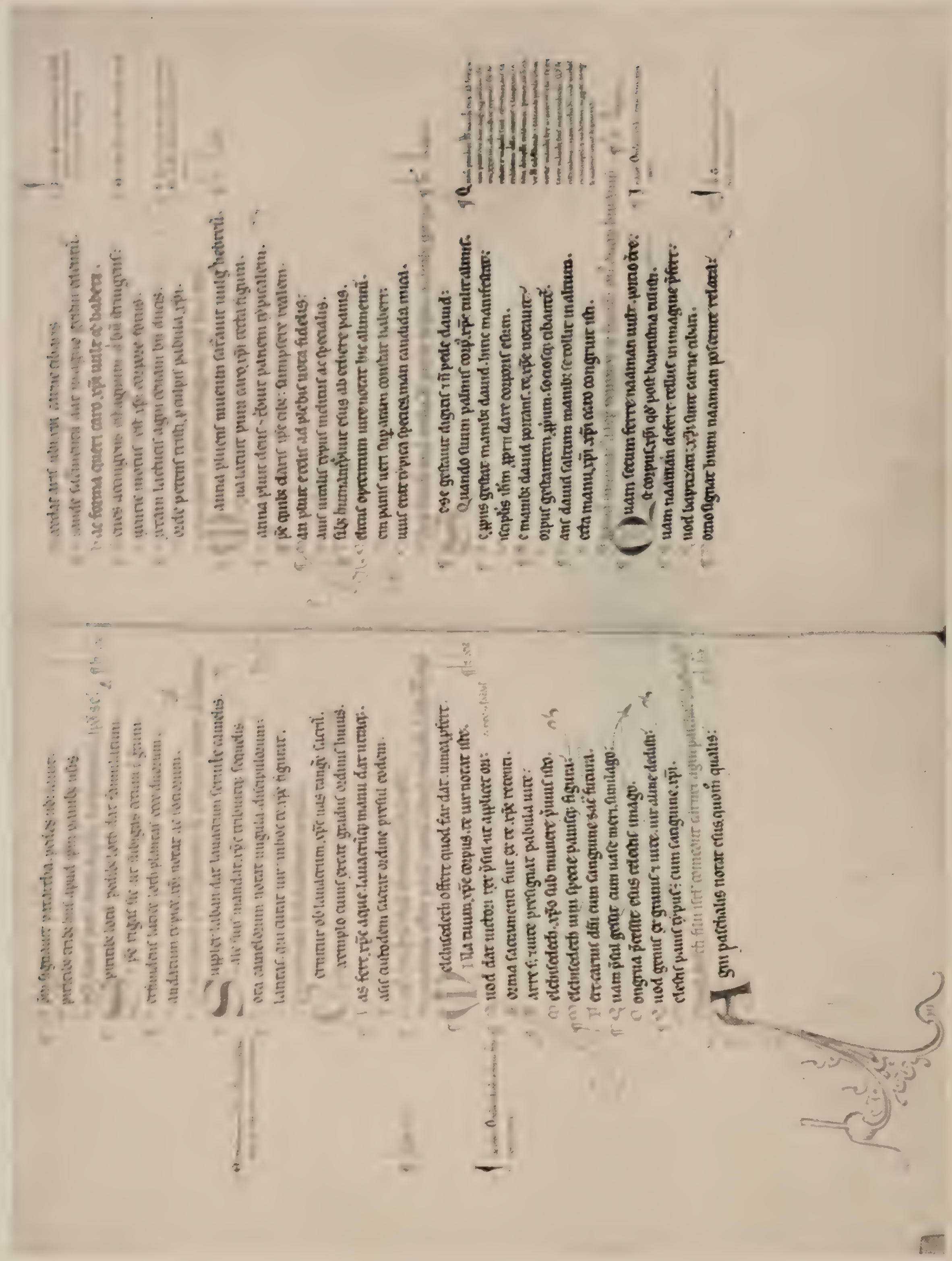
Dolens in sanctuario dei fieri picturarum ineptias et deform(i)a quedam portenta magis quam ornamenta, optabam si fieri posset mentes oculosque fidelium honestius et utilius occupare. Cum enim nostri temporis oculi non solum uana sed etiam profana sepius uoluptate capiantur, nec facile putauerim inanes ecclesie picturas hoc tempore posse penitus abrogari, presertim in cathedralibus et baptismalibus ecclesiis ubi publice fiunt stationes, excusabilem arbitror indulgenciam, si uel eiusmodi picturis delectentur que tanquam libri laicorum simplicibus diuina suggerant, et literatos ad amorem excitent scripturarum. Siquidem, ut pauca tangamus de plurimis, quidnam decentius est, quid fructuosius, speculari circa dei altarium aquilas bicipites, unius eiusdemque capitis leones quatuor, centauros pharetratos (*al.* phaleratos) frementes acephalos, chimeram ut fingunt logicam, fabulosa uulpis et galli diludia, simias tibicines et onos liras Boetii; uel certe contemplari gesta patriarcharum, legis cerimonias, presidia iudicum, typicos regum actus, certamina prophetarum, Machabeorum triumphos, opera Domini saluatoris, et iam coruscantis euangelii reuelata misteria? Nam adeo angusta est ueteris ac noui testamenti series, quatinus honestum et utile postponentes in adinuentionum turpitudine nummos ut aiunt iocosos effundamus? Sed hec fantasmatum ludibria paulatim introduxit pictorum nefanda presumptio, quam utique tanto tempore non debuit ecclesiastica grauitas acceptasse, nam acceptare uisa est, quod reprehensibili non desinit sustinentia tolerare.

Ad moderandam itaque pictorum licentiam immo ⟨ad informandam eorum operam in ecclesiis ubi ping⟨i permittitur digerit pre⟩sens calamus adaptation⟨es quasdam rerum gesta⟩rum ex ueteri et nouo testa⟨mento cum superscriptione⟩ binorum uersuum qui re⟨m gestam ueteris testamenti⟩ breuiter elucidant, et rem n⟨oui conuenienter adap⟩tant, quorundam postula⟨tione capitulatim ad ma⟩num conscripti. Ideo uero pe⟨r singula capitula plures⟩ positi sunt binarii uersuum ⟨ut quod circa unum⟩ non sufficit exprimere breuitas, suppleat circa idem alterata diuersitas, placitam datura legentibus optionem . Qui uidelicet bini uersus circa rem gestam ueteris testamenti scribendi sunt, uel circa aliud quid mistice seu tropice adaptationis. Nam circa rem gestam euangelii eo quod usitatior et notoria sit, sufficit scribere tantummodo nomina personarum. Ceterum hiis qui talia curant non erat meum pingenda queque disponere, sed disponant ipsi prout trahit sua quemque uoluptas, uel prout unusquisque in suo sensu abundat,



Pictor in Carmine. Corpus Christi College, Cambridge, MS. 300. Two pages of the Table of Subjects

Published by the Society of Antiquaries of London, 1951



Pictor in Carmine. Corpus Christi College, Cambridge, MS. 300. Two pages of the Text, showing marginal notes

Published by the Society of Antiquaries of London, 1951

dummodo gloriam Christi querant non suam, nec solum ex ore infantium et lactentium perficiat ipse laudem, sed eciam si hii tacuerint, lapides clament, et dei magnalia pictus quodammodo paries eloquatur. Michi propositum fuit in plerisque iam ecclesiis ceptam honestatis ampliare materiam, et delictum nimie uanitatis prestantiori copia temperare.

In this preface our author states his purpose and method very clearly, and he proceeds forthwith to carry out his plan. First he gives the titles of his 138 chapters, and of the varying numbers of types which he assigns to each. Then, repeating each title, he gives us the distichs explanatory of the types, which make up the body of the book. No type has less than two distichs, and some have as many as six. In most of the manuscripts interlinear glosses and marginal notes—Biblical quotations or explanatory observations—are added. These are doubtless an integral part of the text.

So much for the plan of the work. I will next enumerate the copies of it at present known to me.

1. The best of all, I believe, and the oldest is Corpus Christi College, Cambridge, 300, which contains the *Pictor* alone. It is at latest of the early thirteenth century: I have a complete transcript of it. Its only defect is that two initials have been cut out of it; the first, that of the preface, represented *Theologia* admonishing or directing *Pictor*: the names are written above it. The other may have had a picture of the Annunciation (pls. XXVI, XXVII).
2. Corpus Christi, Cambridge, 217 (ff. 219–25), is an incomplete copy, of cent. xiii, in a volume of collections once in the library of Worcester Cathedral. It has the prologue, list of subjects, and text ending in cap. 27.
3. Phillipps 11059 (a Fairfax manuscript) is of cent. xiii, finely written, with 33 lines to the page. It contains only the *Pictor* and has the same marginalia as no. 1. The second leaf begins *dicit deus*. [This manuscript is owned (1950) by Mr. John Hely-Hutchinson (pls. XXVIII, XXIX).]
4. Oxford, Bodleian Library, Digby 65, ff. 79–102, of cent. xiii, has the verses only, without the list of subjects or the preface.
5. *Ibid.*, Laud lat. 109, from Waltham Abbey, of cent. xiii, in a miscellaneous volume, has the list of subjects without the prologue, and with a few of the verses written in the margin.
6. *Ibid.*, Rawlinson A. 425 of cent. xiii, has *Pictor* only, imperfect at each end, beginning in § xcix of the list of chapters.
7. *Ibid.*, Rawlinson C. 67, ff. 22–86, of cent. xiii, once the property of Hereford Cathedral, contains the whole work with the preface. It is ascribed on the flyleaf to Adam, abbot of Dore.
8. Cambridge, Fitzwilliam Museum 269 (given by J. R. McClean in 1908), of cent. xiii, formerly at Monk Bretton Priory, Yorkshire, contains the full text, notes and all.
9. Cambridge, University Library, Kk. 5. 16, ff. 1–8, of cent. xiii–xiv, contains on ff. 1–8, prefixed to a Bible from Durham, what is apparently a shortened text, giving only one distich to each subject, beginning with the third distich of I. 1 and ending with one on the wheat and tares which I do not find in other manuscripts.

10. Lincoln Cathedral Library, no. 222, art. 16: a complete copy, of cent. xiii, divided into seven Parts. The title is: Inc. prologus in librum de concordia ueteris et noui testamenti. The division is: Pars. i, 23 capp.; ii, 10; iii, 51; iv, 26; v, 9; vi, 12; vii, 7 (138).
11. Lincoln Cathedral Library, no. 229, art. 4, of cent. xiv–xv. Title: Inc. concordancie uet. ac noui testamenti. It has sixty-four chapters only.
12. Durham, Bp. Cosin's Library V. ii. 5, of cent. xiv, from the Cathedral Library, has everything except the preface. It is the last item in a volume of miscellaneous contents.
13. Lambeth 477, of cent. xiii, also miscellaneous, has the preface and list of subjects down to § cxxix.

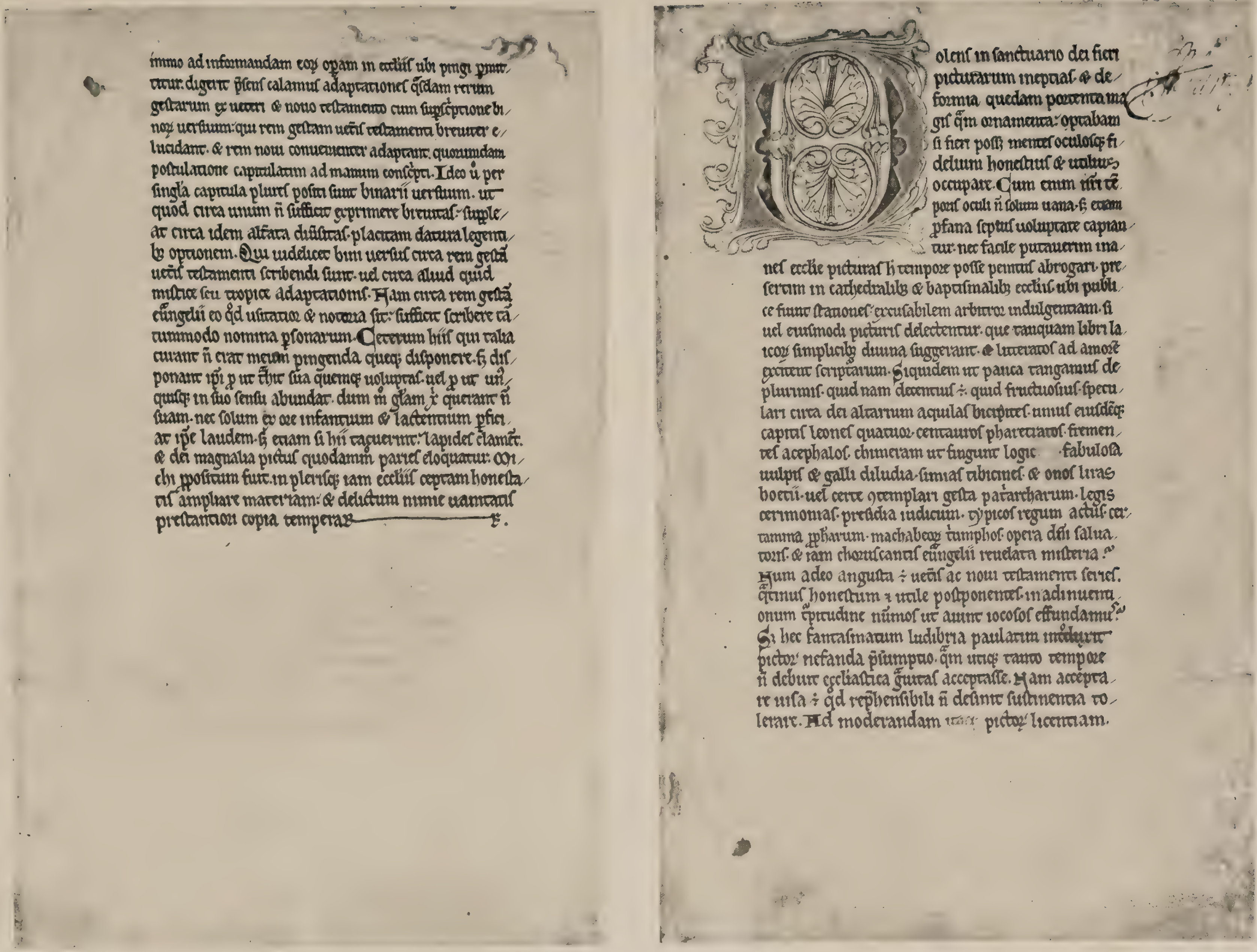
It will be noticed that I have so far found no copy in the British Museum. It can hardly be doubted that one or more must be there: but the book is so often unprovided with a title that it is difficult to trace unless the *incipit* is given. I hope I may be credited with having searched under all the likely headings. However, thirteen manuscripts are enough to construct a text in a case like this; and for my present more modest purpose one good one really suffices. All but two of those on my list are of the thirteenth century, and all are of English origin. I have never chanced upon one in a continental library, though naturally I should be prepared to find some. No such thing was known to M. Delisle when he wrote his *Mélanges*.

Two men have been named as author of the book: Adam of Dore (Abbey Dore, co. Hereford), and Bernardus Morlanensis, author of the poem *De contemptu mundi*. Adam (*fl.* 1200) is said by Bale to have written, besides our book, an answer in verse to the *Speculum Ecclesie* of Giraldus Cambrensis. The *Speculum* contained reflections upon the Cistercian order, to which Adam belonged (Abbey Dore is a Cistercian house), and also *Rudimenta Musices*; neither of which is known to exist. Note that the manuscript which attributes our book to him was once at Hereford, near Dore. Bernard, whose great work has often been printed (most recently by H. C. Hoskier), also has our book fathered on him by Bale, whom Pits, Tanner, Cave, and Fabricius follow. The entry in Bale's *Index Scriptorum* (ed. Poole and Bateson, p. 47), is:—

> Bernardus Morlanensis scripsit carmine Colloquium Gabrielis et Mariae de incarnatione verbi, lib. i
>
> Fit caput ex(s)angue planta mulieris in angue

(which is the first verse of our text). Bale derives his information 'ex museo Thome Kaye, Oxon.' In his larger work *De scriptoribus* (Cent. x. 49) he tells us no more. I do not see how we can hope to discover the ground of the attribution.

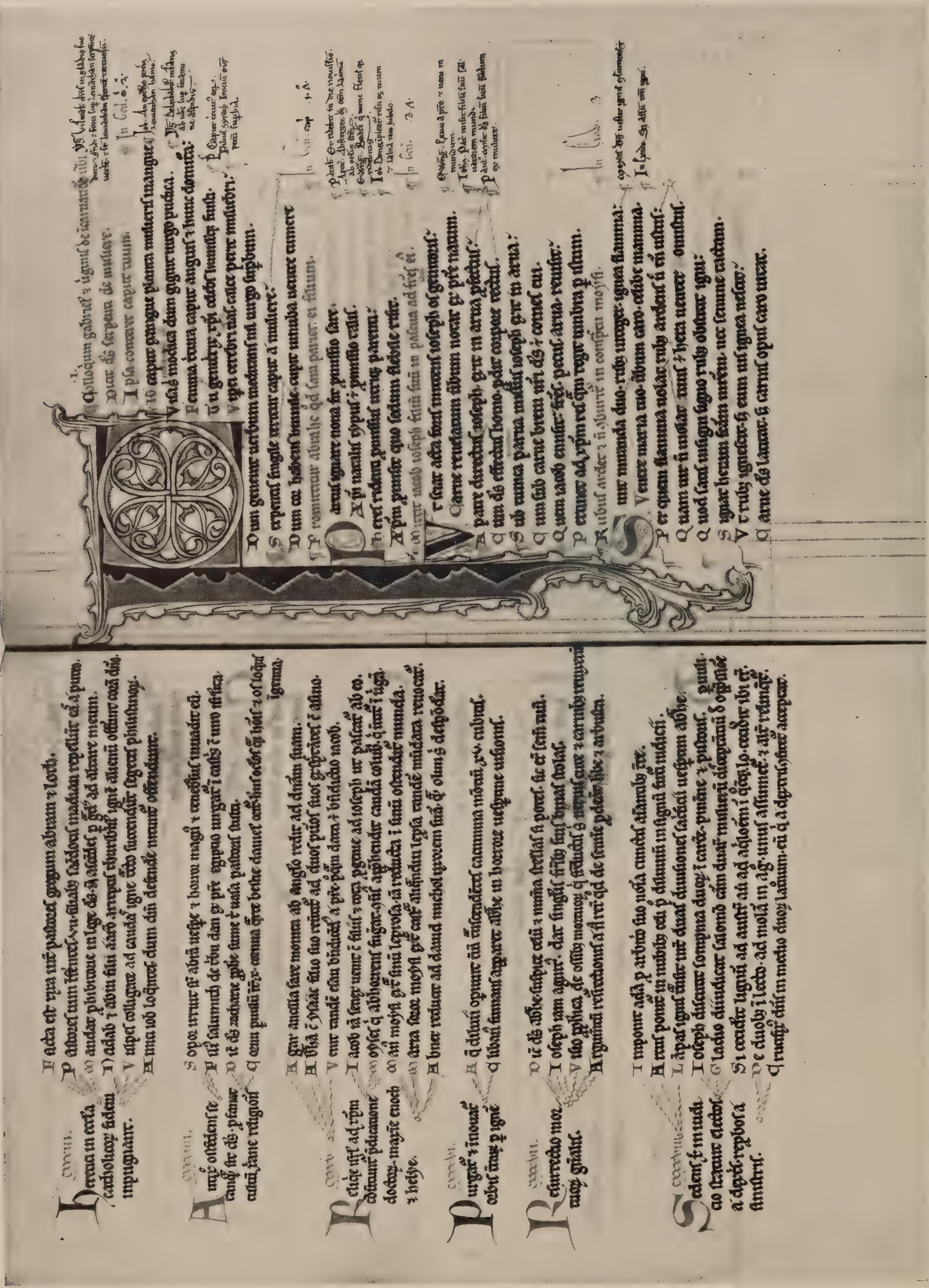
Of the two claimants I should certainly incline to favour Adam of Dore, as an Englishman, a Cistercian, and a reputed writer of verse. For the spirit of our author is at least in sympathy with that of the early Cistercians. He would prefer to have no paintings at all in churches, but if there are to be such things, he will at least have them to be edifying; with the grotesques of which both books and buildings are so full in the twelfth century he has no patience.



Pictor in Carmine. Mr. Hely-Hutchinson's MS., formerly Phillipps MS. 11059. The complete text of the Preface

Published by the Society of Antiquaries of London, 1951

PLATE XXIX



Pictor in Carmine. Mr. Hely-Hutchinson's MS., formerly Phillipps MS. 11059. Last page of Table of Subjects and beginning of Text

Published by the Society of Antiquaries of London, 1951

Very similar to this is the language of St. Bernard, in his *Apologia de vita et moribus religiosorum* addressed to William, abbot of St. Thierry (§ 32), in a passage of which I will now give a translation and the text. He has been criticizing the expenditure on monastic buildings and their adornment, and has been questioning the propriety of representing sacred subjects on pavements, where they are trodden on and soiled.

But perhaps [he says] that verse of a psalm will be quoted against me, 'Lord, I have loved the beauty of thy house'. Well, I agree. Let us suffer these things in the church, since, though they may be baneful to the lightminded and covetous, they are not so to the simple and devout (§ 33). But, in the cloister, before the eyes of penitent brethren, what is that ridiculous pageant of monstrosities, that beauty of ugliness, doing? What place is there for dirty monkeys, for ferocious lions, for monstrous centaurs, for half-men, for spotted tigers, for fighting soldiers, for huntsmen blowing their horns? You may see there a number of bodies with a single head, or again many heads upon a single body. Here a four-footed beast is seen with a serpent's tail, there the head of a quadruped upon a fish. Here is a beast whose forepart is a horse and it drags a half-goat after it: there is a horned creature with the hind quarters of a horse. So copious, in short, and so strange a variety of diverse forms is to be seen that it is more attractive to peruse the marbles than the books, and to spend a whole day in gazing at them rather than in meditating on the law of God. In God's name! if men are not ashamed of the folly of it, why do they not at least smart at the thought of the cost?

Bernardi Apol. de vita et moribus religiosorum. Opp., 1667, iv, 137, §§ 32, 33

Ut quid saltem sanctorum imagines non reveremur, quibus utique ipsum quod pedibus conculcatur, scatet pavimentum? Saepe spuitur in ore Angeli, saepe alicuius sanctorum facies calcibus tunditur transeuntium, et si non sacris his imaginibus, cur uel non parcitur pulchris coloribus? Cur decoras quod mox foedandum est? Cur depingis quod necesse est conculcari? Quid ibi valent venustae formae, ubi pulvere maculantur assiduo? Denique quid haec ad pauperes, ad monachos, ad spirituales viros? Nisi forte et hic adversus memoratum Poetae versiculum,[1] propheticus ille respondeatur *Domine dilexi decorem domus tuae, et locum habitationis gloriae tuae*. Assentio. Patiamur et haec fieri in Ecclesia, quia etsi noxia sunt vanis et avaris, non tamen simplicibus et devotis.

Ceterum in claustris coram lugentibus fratribus quid facit illa ridicula monstruositas, mira quedam deformis formositas, ac formosa deformitas? Quid ibi immundae simiae? quid feri leones? quid monstruosi centauri? quid semihomines? quid maculosae tigrides? quid milites pugnantes? quid venatores tubicinantes? Videas sub uno capite multa corpora, et rursus in uno corpore capita multa. Cernitur hinc in quadrupede cauda serpentis, illinc in pisce caput quadrupedis. Ibi bestia praefert equum, capram trahens retro dimidiam, hic cornutum animal equum gestat posterius. Tam multa denique tamque mira diversarum formarum ubique varietas apparet, ut magis legere libeat in marmoribus quam in codicibus, totumque diem occupare singula ista mirando, quam in lege Dei meditando. Pro Deum! si non pudet ineptiarum, cur vel non piget expensarum?

It seems almost certain that the author of *Pictor* must have read this passage. It is the only one of the kind that I have come across, and I shall be glad to learn of others. Certainly the art of the twelfth century, as exemplified on the portals and capitals of numberless Romanesque buildings, affords much justification for the strictures of St. Bernard and of *Pictor*.

That the author of the latter was an Englishman is rendered probable, not only by the currency of his book in England, but by the fact—I believe it to be a fact—that

---

[1] Pers. *Sat.* ii, 69: 'Dicite, Pontifices, in sacro quid facit aurum?' Quoted in § 31.

England in the latter part of the twelfth century was, more than France (the only other country which comes into question), the place where the pursuit and collection of types for artistic purposes was actively prosecuted. The three great series of which we have records, at Peterborough, Canterbury, and Worcester, are far more extensive and elaborate than anything we find on the other side of the Channel. Moreover, the coincidences between *Pictor*, Peterborough, and Canterbury are numerous and marked. French art, in my experience, affords in this period only a few single windows with types of the Incarnation and Passion, or of the Parable of the Good Samaritan illustrated and expounded by means of types. In sculpture we find little beyond the west front of Notre Dame la Grande at Poitiers and one of the portals of Laon Cathedral to recall this aspect of art. Of course there is plenty of Old Testament symbolism. Statues of Solomon and the Queen of Sheba, of Aaron and Melchizedek, are there to remind us of the Presentation or the Adoration of the Magi and of the Eucharist; but the system is not that of *Pictor*. Pending the production of evidence to the contrary, I claim him primarily for England, and secondarily for a member of the Cistercian order.

We have now to examine the scope and arrangement of his work. Of the 138 chapters into which it is divided, nos. 1–28 take us from the Annunciation to the Baptism; 29–77 cover the period of the Ministry; 78–115 the Passion, from the Entry into Jerusalem to the Ascension; 116–33 the beginnings of the Church; 134–8 the end of the world. Besides the 138 New Testament subjects there are 508 types: in all, 646. The number of verses is stated in the Fitzwilliam MS. to be 3,582.

In each of the divisions I have mentioned there are noticeable features, some of omission, some of insertion. Among remarkable omissions I reckon in the first place the absence of all legendary matter. The early life of the Virgin, and the story of her parents form an integral part of most later medieval cycles of pictures; so does the Fall of the Idols in Egypt on the occasion of the Flight. We miss also the legends connected with the Passion, e.g. the meeting with St. Veronica on the Via Dolorosa, and the appearance of Christ to the Virgin after the Resurrection. In short, nothing seems to be admitted by the writer for which he did not consider that he had scriptural warrant.

In the 87 chapters devoted to the Ministry and Passion, I note the absence of all the Parables (some of which were elaborately treated in the Canterbury windows) and of the Transfiguration. This last omission I do not at all understand. The cycles which leave out all other incidents in the Ministry sometimes include this. Other episodes, common elsewhere but absent here, are the Agony in the Garden, the falling back of the soldiers, *Ecce Homo*, Pilate washing his hands, the Deposition, the appearance at Emmaus, the Incredulity of Thomas, *Noli me tangere*.

Then as to insertions or inclusions. The presence of so many scenes from the Ministry links the book with the earlier Christian art in spirit and distinguishes it from the later, which seems to ignore almost everything between the Temptation and the Raising of Lazarus. Again, very few subjects from the Acts of the Apostles were at all generally adopted. Pentecost, the Stoning of Stephen, the Conversion of Paul, were almost the only ones in current use. To these one should perhaps add the Ascension, since it is the account thereof in Acts i which inspires nearly all the representations. *Pictor* himself does not follow the story of Acts farther than the rejection of the Jews and the mission of Paul and Barnabas to the Gentiles (Acts xiii). He then ends in a way not very usual. The destruction of Jerusalem (132) emphasizes the rejection of the Jews. The opposition of Heretics to the Church (133) is undefined in time, and applicable to a long period of history. Then, instead of any imagery taken from the Apocalypse of John, we have (134) the coming of Antichrist, (135) the conversion of the remnant of Israel, (136) the final fire, (137) the general resurrection, and (138) the judgment. This ignoring of the Apocalypse is yet another noticeable feature in so Biblical a collection of subjects.

When we ask what sources our author drew upon, we open a large and difficult question. In the Christian Church, Origen was primarily responsible for that allegorical interpretation of the Old Testament upon which the whole of this book depends. Predecessors he had, no doubt, but we cannot stop to discuss them: his followers include the great majority of the Latin commentators on the Bible down to our author's time. *Pictor* seldom names his sources: among the few extra-Biblical authors whom he cites are Augustine, Dionysius the Areopagite, Jerome, and Gregory. I have not gone very far with the task of tracing out the origin of each of his types. There lay ready to his hand a digest of the principal comments on the whole Bible in the shape of the *Glossa Ordinaria*. All monastic libraries of any consideration contained it: they also had Augustine on Genesis and the Psalms, Gregory's *Moralia* on Job, and all or most of Jerome's commentaries, with the Homilies of Origen on some of the Old Testament books in Latin versions. Equipped with these, and with a mind alert to add to what they furnished, our author could be at no loss for material.

The annotations to the text I have only examined at all carefully in two copies, Corpus Christi College, Cambridge, 300 (C), and Fitzwilliam Museum MS. 269 (F). They differ very slightly upon the whole. F sometimes inserts a Biblical text which C has not got, but C is on the whole the fuller. Most of the annotations are illustrative texts from the Psalms, Prophets, and New Testament. They are of the kind which we find inscribed on the scrolls held by prophets in the *Biblia Pauperum*. They are very irregularly distributed through the book, a good number of the subjects having none. Some texts are repeated several times over. There are also a few interpretations of proper names—Laban, Aaron, Ruth, Mary—and a few exegetical notes. Of these I give in full the one that is most interesting, viz. cap. 87. 4 (pl. XXIX). The antitype is:

> Corpus et sanguinem suum communicat discipulis

The fourth type is:

> Dauid saltans coram archa dei portat se ipsum manibus propriis

The verses are:

> Sese gestauit digitis et non pede Dauid
> Quando suum palmis corpus Christus tulit almis
>
> Se propriis gestat manibus Dauid. hinc manifestat
> Discipulis Ihesum proprii dare corporis esum

Se manibus Dauid portans te Christe notauit
Corpus gestantem proprium sociosque cibantem

Dans Dauid saltum manibus se tollit in altum
Vecta manu Christi Christi caro congruit isti.

The marginal note:

Quomodo portaretur Dauid manibus suis ad litteram non patet, ut dicit Augustinus super titulum psalmi xxxiii, ubi mistice exponit *Et ferebatur manibus suis*, commemorans sacramentum dominici corporis et sanguinis in cena discipulis traditum. Potuit autem fieri ut Dauid subsiliendo et saltando pedibus sursum uersis manibus terre inniteretur et sic se portaret manibus suis more ioculantium (iocancium *C*, iactantium *F*). Quod fecisse uidetur coram archa dei. Unde Michol eum discoopertum et nudatum improperat tanquam si nudetur unus de scurris (2 Reg. vi. 20).

The phrase *Et ferebatur in manibus suis* on which Augustine comments is a too-literal translation of the Greek καὶ παρεφέρετο ἐν ταῖς χερσὶν αὐτοῦ (1 Reg. xxi. 13) 'he feigned himself mad in their hands' (English version); *collabebatur inter manus eorum* (Vulg.). This subject of the feigned madness of David and his walking on his hands, which is recorded at Canterbury as a type of the Eucharist, actually exists, as I noted long ago, in a thirteenth-century medallion in a south transept window at Lincoln Cathedral.[1]

One would be glad to know how far our author actually succeeded in influencing the painters of his time. I may say at once that I cannot point out a single one of his *verses* as occurring in any window or other work of art. Such similarities with them as do occur may just as well be due to borrowing on his side as on the other. But in respect of *subjects* there is in some cycles a notable number of coincidences with him. I have pointed this out before (see especially my tract on the *Twelve Windows of Canterbury*, Camb. Ant. Soc., 1901) but I must repeat myself here. Of the English cycles Canterbury affords by far the largest number of parallels, which shall be set forth in tabular form.

Window I has:

Annunciation	Burning Bush
	Gideon's fleece
Visitation	Mercy and Truth, Righteousness and Peace
Nativity	Aaron's rod
	Stone cut out without hands

Window II:

Herod and the Magi	The Pillar of Fire
Adoration of the Magi	Queen of Sheba
The Magi warned	Lot
	The Prophet of 1 Reg. xiii
Presentation	Samuel offered
Flight	Flight of David
	,, Elijah
Massacre of the Innocents	Slaughter of the Benjamites
	,, ,, priests at Nob

---

[1] See Nelson, *Ancient Painted Glass in England*, p. 140.

Window III:

Christ and the Doctors	Daniel's judgment
The Temptation	Temptation of Eve ,, ,, Esau David and Goliath

Window IV:

Call of Nathanael	Adam and Eve hide themselves
Waterpots of Cana	Six Ages of the World Ages of Man
Call of the Apostles	Paul and the Gentiles: Peter and the Jews
Christ in the Synagogue	Ezra reads the Law The ordination of Readers
Sermon on the Mount	Giving of the Law
The Leper cleansed	Naaman healed

Window V:

The Woman of Samaria	Eliezer and Rebekah Jacob and Rachel
Mary and Martha	Jacob with Leah and Rachel

Window X:

In the three raisings of the dead, Hildebert's epigram on their meaning is used in both cycles.

Window XI:

The Last Supper	David bearing himself (see above) The Manna
Washing of Feet	Abraham and the Angels Laban and the Camels
Betrayal and Arrest	Joab and Amasa (Joseph sold)
The Scourging	Job afflicted Elisha mocked

Window XII:

Bearing the Cross	Isaac and the wood The widow of Zarephath
The Crucifixion	The Brazen Serpent The Red Heifer The death of Abel The blood on the lintel
The Burial	Samson in Gaza Jonah swallowed
The Harrowing of Hell	David rescues the lamb Samson and the gates Daniel and the dragon

The Resurrection	Jonah cast up David's escape The lion's whelp raised Joseph released

Many of these Passion-types are, of course, among the commonplaces of typology: others are very striking.

The Peterborough cycle, dating from before 1200, and preserved in a Brussels Psalter and elsewhere, has most of the above, and only adds:

Entry into Jerusalem	Triumph of David
Cleansing the Temple	Gehazi smitten with leprosy

The Worcester cycle of paintings, once in the Chapter House, and also of the twelfth century, has nothing in common with *Pictor* save the most obvious types.

These English cycles are, as I have said, fuller than any to be found on the Continent before the fourteenth century: after that there is a great output, particularly in Germany, headed by the *Biblia Pauperum* and *Speculum Salutis*. On these and their congeners Dr. H. Cornell's admirable book on the *Biblia Pauperum* (Upsala, 1925) should be consulted, as also Lutz and Perdrizet's edition of the *Speculum*. The most relevant cycle to ours in date and character is that of the retable of Klosterneuburg, near Vienna, made by the enameller Nicolas of Verdun in 1181 and restored and enlarged by the addition of two rows of subjects (nos. 8 and 10 below) in 1329. Here the types flank the antitypes in columns, headed *Ante legem* and *Sub lege*, the antitypes in the central column being headed *Sub gracia*.

A table of the cycle follows:

	Ante legem	*Sub gracia*	*Sub lege*
1.	Promise of Isaac	Annunciation	Promise of Samson
2.	Birth of Isaac	Nativity	Birth of Samson
3.	Circumcision of Isaac	of Christ	of Samson
4.	Abraham and Melchizedek	The Magi	The Queen of Sheba
5.	The Exodus	The Baptism	The Laver on 12 oxen
6.	Moses goes to Egypt	The Entry	The Paschal Lamb
7.	Melchizedek	The Last Supper	Manna in the ark
[8.	Death of Abel	Betrayal	Death of Abner]
9.	Isaac offered	Crucifixion	Two spies and grapes
[10.	Eve's fall	Deposition	King of Jericho taken]
11.	Joseph in the pit	Burial	Jonah swallowed up
12.	First-born smitten	Harrowing of Hell	Samson and the lion
13.	Jacob's blessings	Resurrection	Samson and the gates
14.	Enoch translated	Ascension	Elijah taken up
15.	Noah's ark	Pentecost	Giving of the Law
16.	Last Judgment, without types		

The remainder of this article will consist of a transcript of the table of subjects in *Pictor*, copied from that which precedes the text, and corrected from the rubrics which occur *in* the text. The order in which the types are arranged is simple enough: it follows that of the Books of the Bible, and these are followed by such as are taken from

Natural History (e.g. the Phoenix) or Church usage (e.g. the ordination of the several grades of the ministry). Interpretations of a good many types also occur. The historical Books of course furnish most of the types, there is little or nothing from the Psalter, and not a great deal from the Prophets. Hardly any incident in Genesis is omitted. Of the major prophets Isaiah and Jeremiah furnish little, Ezechiel more, Daniel much: of the minor prophets, only Amos, Jonah, and Zechariah are represented. On the other hand, the marginal prophecies, not given here, may cover them all.

The reader cannot, I think, fail to be impressed by the ingenuity with which the most unpromising incidents in the Old Testament story are pressed into the service, and perhaps he may feel, as I do, that this ingenuity often testifies to a really poetic imagination, exercised by generations of men determined to find Christ everywhere.

(i) *Colloquium Gabrielis et uirginis de incarnacione uerbi*
Dicit deus serpenti de muliere Ipsa conteret caput tuum
Promittitur Abrahe quod Sara pariet ei filium
Mittit Iacob Ioseph filium suum in pascua ad fratres eius
Rubus ardet et non comburitur in conspectu Moysi
Virgam proicit Moyses in terram coram domino qui (que) uertitur in colubrum
Manna repositum seruatur in urna aurea
Summus pontifex in lege super patre suo et matre non contaminatur
Ros in uellere Gedeonis et area
Annuntiat angelus uxori Manue nasciturum ex ea Samson
Samson obuium sibi catulum leonis apprehendit
Non est auditus sonus in edificatione templi dei in Ierusalem
Salomon sedet in trono eburneo
Ascendit dominus super nubem leuem et ingredietur Egyptum
Dominus ingreditur per clausam portam apud Ezechielem
In Idumeam extendit dominus calciamentum suum
Sapientia edificat sibi domum septem columpnarum
Sponsus mittit manum suum per foramen et uenter sponse tremit ad tactum eius
Hester osculatur summitatem uirge Regis Assueri
Sol lucet per medium uitri nec uiolat substantiam
Rinoceros procumbit et obdormit in gremio speciose uirginis
Elicitur scintilla ignis ex aquosa cristallo per uirtutem solis oppositi

(ii) *Exurgens Maria abiit in montana*
Congregatis aquis seorsum apparet arida circa mundi originem
Requiescit archa super montes Armenie
Nubecula ascendit de mari quasi uestigium hominis orante Helya
Iudith portans caput Olofernis ascendit in eminentem locum

(iii) *Salutant se inuicem Maria et Elisabeth*
Moyses et Aaron sibi obuiantes in monte dei oscula iungunt
Duo Cherubin obumbrantes propiciatorium respiciunt se inuicem et alis contingunt
Misericordia et ueritas obuiauerunt sibi
Iusticia et Pax osculate sunt

(iv) *Canticum Marie*
Canticum Marie prophetisse sororis Moysi et Aaron
Canticum Debbore prophetisse uxoris Lapidoth

(v) *Nascitur Iohannes Baptista*

Lucerna olei purissimi ardet coram archa federis
Maior angelus mittit minorem angelum ad Zachariam prophetam
Lucifer precedit ortum solis
Preco preuenit aduentum iudicis

(vi) *Edictum Cesaris Augusti super orbis descriptione*

Iubet deus Moysi ut numeret filios Israel
Iubet Dauid Ioab ut numeret populum

(vii) *Ascendit Ioseph Bethleem cum uxore pregnante*

Ruth Moabitis uenit Bethleem sequens Noemi socrum suam
Samuel uenit Bethleem cum cornu olei ut ungat Dauid in regem

(viii) *Nascitur infans Christus et reclinatur in presepio*

Germinat circa mundi originem tellus intacta herbam uirentem et floridam
Lignum uite florens et fructificans in medio paradisi
Formauit deus hominem de limo terre intacte et inmaculate
Tulit deus hominem quem formauerat et posuit in paradiso
Noe plantauit uineam et bibit uinum ex ea
Sara fouet in cunabulis paruulum Isaac coram patre suo Abraham
Rachel apud Bethleem in partu filii sui Beniamin periclitata moritur
Iacob induit Ioseph filium suum tunica polimita quam ipse pater ei fecerat
Mandat deus altare de terra debere sibi fieri
Virga Aaron floret et germinat amigdala in tabernaculo federis
Iesus sacerdos magnus stat indutus uestibus sordidis apud Zachariam prophetam
Lapis abscisus de monte sine manibus comminuit statuam quatuor regnorum
Rex Assuerus signatas anulo suo literas tradit Hester que destinat eas ad populi liberationem

(ix) *Angelus pastoribus annuntiat Christum natum*

Gabriel predicit Danieli certum tempus de aduentu Christi ducis
Raphael salutat Tobiam cecum dicens Gaudium tibi semper sit

(x) *Pastores ad presepe ueniunt*

Incole conueniunt et corrident Sare puerpere nato Ysaac
Mulieres uenientes congratulantur Ruth Moabitidi nato ex ea Obeth

(xi) *Magi uidentes stellam in oriente ueniunt adorare Christum*

Gabaonite ueniunt querere Iosue et subdere se ditioni eius
Tres amici Iob condicunt sibi ut pariter uenientes uisitent eum et consolentur

(xii) *Circumciditur Christus puer et uocatur Ihesus*

Circumcidit Abraham filium suum imposito nomine
Vertit Pharao nomen Ioseph uocans eum lingua Egyptia saluatorem mundi
Circumcidit Sephora filium suum acutissima petra
Mittens Moyses exploratores duodecim uocat Osee filium suum Nun Iosue

(xiii) *Magi recedentes ab Herode sequuntur stellam preuiam*

Filii Israel recedentes a Pharaone secuntur columpnam ignis
Tres pueri declinant a rege Nabuchodonosor adoraturi deum celi non statuam

(xiv) *Magi adorant Christum offerentes ei munera*
Samson accipit in coniugium mulierem de filiabus Philistinorum
Serui Hyram regis Tyri deferunt Salomoni aurum de Ophir
Regina Saba offert Salomoni aurum et aromata
Nuncii Merodahbaladan regis Babilonie deferunt Ezechie conualescenti literas et munera
Dantur Iob post flagella inaures auree

(xv) *Magis dormientibus prohibitum est ne redeant ad Herodem*
Prohibetur Loth respicere post tergum ad incendium Sodome
Prohibetur uir dei qui uenerat de Iuda in Bethel reuerti per uiam qua uenerat

(xvi) *Oblatum in templo uirgo mater filium tradit Symeoni*
Ablactatum Sara filium suum Ysaac sistit Abrahe recumbenti
Adultum Moysen Iosabeth mater sua tradit in aula filie Pharaonis
Anna Samuelem filium suum oblatum in Sylo tradit Heli sacerdoti
Moralis intelligentia munerum oblatorum agni turturum et columbarum

(xvii) *Monetur in sompnis Ioseph fugere in Egyptum*
Dicit deus Abrahe Egredere de terra et de cognatione tua
Dicit deus Iacob ad puteum iuramenti Descende in Egyptum

(xviii) *In Egyptum ducitur Christus puer transfuga*
Descendit Abraham in Egyptum ut peregrinetur ibi
Descendit Iacob in Egyptum subuectus a filiis suis
Fugit Moyses in Madian a facie Pharaonis
Fugit Dauid a facie Saul persequentis
Fugit Helyas a facie Achab et Iezabel

(xix) *Herodes occidit pueros in Bethleem et finibus eius*
Pharao submergere facit in flumine paruulos Hebreorum masculos
Tribus Beniamin fere tota ciuili bello consumitur
Saul per manum Doech occidit sacerdotes domini propter Dauid transfugam
Antiochus rex facit suspendere duo paruulos ad ubera matrum suarum et simul precipitare

(xx) *Defuncto Herode monetur Ioseph redire in terram Israel*
Mortuo Pharaone iubet deus Moysi ut redeat ad fratres suos
Occiso Saul preceptum est Dauid a domino ut ascendat in Ebron
Helye post fugam ad montem Oreb dicit deus Vade reuertere

(xxi) *Post mortem Herodis reducitur puer Ihesus de Egypto in Nazareth*
Post mortem Pharaonis Moyses de Madian reuertitur ad fratres suos in Gessen
Postquam occisus est Saul Dauid reuersus est cum sociis suis in Ebron
Post mortem regis Sennacherib Tobias reuertitur Niniuem cum uxore et filio

(xxii) *Sedens Ihesus duodennis in medio doctorum audit et interrogat*
Samuel puer indicat Hely uisionem de ipso et filiis eius
Daniel puer in medio seniorum Babilonie loquitur sapientiam

(xxiii) *Descendit Nazareth cum parentibus subditus illis*
Simplex Iacob habitat in tabernaculo obediens Rebecce matri suo et patri suo Ysaac
Adolescens Dauid aula regis postposita redit ut custodiat oues patris et matris sue

(xxiv) *Iohannes in deserto predicat et baptizat*

Hyram opilio Iude ab ipso missus defert hedum Thamar
Moyses populum sanctificat in ablutione uestium contra dationem legis

(xxv) *Iohannes digito Christum ostendit dicens Ecce agnus dei*

Preco coram Ioseph clamat ipsum esse prepositum toti Egypto
Abdias dispensator nuntiat regi Achab Adest Helyas

(xxvi) *Venit Ihesus ad Iohannem baptizandus ab eo*

Diuertit Iudas ad uirum Odollamitem uidelicet ad Hyram opilionem suum
Venit Dauid ad aream Areuna Iebusei ut sacrificet domino

(xxvii) *Baptizat Iohannes Christum in Iordane*

Iacob adolescens in baculo suo transit Iordanem
Moyses exponitur in fiscella scirpea secus flumen
Abluit Moyses Aaron aqua priusquam unguatur in pontificem
Helyseus minister fundit aquam super manus domini sui Helye

(xxviii) *Reuelatur trinitas Pater in uoce. Filius in homine. Spiritus sanctus in columbe specie*

Tres angeli apparent Abrahe quibus ille modo quasi uni modo quasi tribus loquitur
Samuel propheta unguit Dauid paruulum in regem fuso oleo de cornu
Duo Seraphin apud Ysayam clamant alter ad alterum Sanctus Sanctus Sanctus
Tria circa solem indiuidua. substantia. splendor et calor

(xxix) *Ieiunat Christus in deserto quadraginta diebus*

Ieiunat Moyses in monte Synai quadraginta diebus ante legis dationem
Ieiunant undecim tribus Israel pro flagicio unius tribus Beniamin in Gabaa
Ieiunant uiri Iabes vii diebus pro morte regis Saul
Ieiunat rex Dauid pro salute paruuli desperati quem peperit ei Bersabee
Ieiunat Helyas xl diebus pergens per heremum ad montem dei Oreb
Ieiunant Niniuite per triduum ad predicationem Ione
Ieiunat Daniel tribus ebdomadis uisurus deinde misteria
Ieiunat Mardocheus pro salute populi sui
Ieiunant Iudas Machabeus et fratres eius pro lege destructa

(xxx) *Temptatio domini de gula*

Temptat Euam diabolus de gula per serpentem dicens In quacumque die commederitis
Temptatus a gula Edom qui et Esau sumit lentis edulium
Temptatus Ionathas gustato melle transgreditur interdictum regis Saul
Dauid funda iaciens uno lapide Goliam prosternit
Temptatus Dauid affectat aquam de cisterna Bethleem set ablatam non bibit
Temptatus propheta qui uenerat de Iuda et inobediens domino comedit in Bethel

(xxxi) *Temptatio domini de uana gloria*

Temptat Euam diabolus de uana gloria per serpentem dicens Eritis sicut dii
Temptatus Ezechias a uana gloria thesauros suos ostendit Babiloniis
Apud Zachariam Sathan stat a dextris Ihesu magni sacerdotis ut aduersetur ei
Promotus Daniel releuatus a rege Nabuchodonosor non gloriatur
Temptatus Nabuchodonosor gloriatur quod edificauit Babilonem
Exaltatus Mardocheus super equum selle regie non est tactus uana gloria.

(xxxii) *Temptatio domini de auaritia*

Temptat Euam diabolus de auaritia per serpentem dicens Scientes bonum et malum
Rex Sodomonum offert Abrahe diuitias prede reducte set ille respuit
Laban iurgatur cum Iacob in monte Galaad
Temptatus auaritia rex Saul reseruat predam de Amalech quam disperdere debuerat
Renuit Helyseus accipere de aceruo auri argenti et uestimentorum quem exponit ei Naaman
Iob propter ablatas sibi possessiones non mouetur

(xxxiii) *Recedente Sathana angeli accedentes ministrant Ihesu*

Reuerso Laban ad propria angeli dei ueniunt obuiam Iacob
Angelus Raphael ministrat Tobie dux et comes itineris

(xxxiv) *Andreas et alius discipulus Johannis secuntur Ihesum. Et Andreas fratrem suum Symonem adducit*

Iudas diuertens ad Hyram opilionem suum filiam Chananei ducit uxorem
Cortina cortinam trahit in opere tabernaculi testimonii

(xxxv) *Philippus uocat sub ficu Nathanaelem et adducit ad Ihesum*

Adam et Eua de foliis ficus perizomata facientes tegunt sibi pudenda
Ysaia iubente cataplasmatur Ezechias de massa ficuum et conualescit

(xxxvi) *Mutat Christus aquam in uinum*

Allegorica intelligentia de sex ydriis per sex etates seculi
Tropologica intelligentia de sex ydriis per sex gradus etatis humane

(xxxvii) *Ihesus incipit predicare, set occulte, quasi intra domum et paucis*

Ysaac fodit puteos quos foderant serui patris eius
Ioseph pascit pecora Iacob patris sui cum fratribus suis
Iudas trahit Thamar in biuio anulum armillam et baculum
Dauid paruulus assuescens cythare pascit oues patris sui Ysai Bethleemitis
Vermis ascensu diluculi arefacit hederam super caput Ione

(xxxviii) *Eicit uendentes et ementes de templo et cathedras uendencium columbas euertit*

Cherubin uibrans gladium uersatilem excludit Adam et Euam a paradiso
Ingresso Noe cum filiis suis in archam claudit a foris ostium deus
Puer Samuel aperit mane ostia domus domini
Giezi repositis hiis que acceperat a Naaman stans coram Heliseo percutitur lepra
Constituti ianitores obseruant ad ostia templi domini
Episcopus ordinat ostiarios in ecclesia

(xxxix) *Nichodemus uenit ad Ihesum nocte doceri ab eo*

Saul uenit ad Samuelem accipere responsum super re dubia
Chusi (uel -sai) uenit ad Dauid amicus ipsius in occulto

(xl) *Piscatio duarum nauium ubi rupta sunt retia*

Allegorica ratio prioris nauis. Petrus predicat ecclesie primitiue, a quo recedunt Pharisei
Allegorica ratio alterius nauis. Paulus predicat ecclesie gentium, a quo recedunt scismatici et heretici

(xli) *Christus legit in synagoga in libro Ysaie prophete*
Moyses recitat populo uolumen legis in Exodo
Rex Iosyas legit populo librum diuine legis inuentum
Esdras stans in gradu ligneo legit coram populo uerba legis
Episcopus ordinat lectores in ecclesia

(xlii) *Arguit Iohannes Herodem propter Herodiadem*
Finees confodit uirum Israelitam cum scorto Madianitide
Nathan arguit Dauid propter uxorem Urie

(xliii) *Mittitur in carcerem Iohannes iubente Herode*
Mittitur in carcerem Micheas iubente rege Achab
Mittitur Ieremias in lacum a uiris regis Sedechie

(xliv) *Predicatio Ihesu manifesta*
Seminat Ysaac in Geraris et metit in ipso anno centuplum
Nubes preuia ducit filios Israel egressos de Egypto
Moyses Deuteronomium edidit in figura euaungelii
Iosue cultris petrinis circumcidit secundo filios Israel
Samson apud Gazam captiuus molit in carcere
Helyseus de uase nouo sal in aquas mittit

(xlv) *Vocantur de mari Petrus Andreas Iacobus et Iohannes*
Creat deus quinta die uolucres celi de aquis
Eligit sibi Iosue uiros qui pugnent contra Amalech

(xlvi) *Vocat Christus Matheum de theloneo*
Hortatur Moyses cognatum suum Obab ut ueniat secum in terram promissionis
Vocat Helyas Helyseum ab aratro

(xlvii) *Eliguntur duodecim apostoli*
xii duces generati ab Ysmaele
xii patriarche filii Iacob
xii fontes aquarum inuenti in Helym a filiis Israel
xii grepuli oblati super altare xii titulorum ad radices montis Synai
xii lapides preciosi in rationali super pectus Aaron
xii panes propositionis super mensam in tabernaculo testimonii
xii principes offerentes dona in dedicatione altaris
xii exploratores a Moyse missi in terram Chanaan
xii lapides sublati de alueo Iordanis
xii boues ex ere fusiles portantes mare eneum id est luterem
xii leunculi super sex gradus ante thronum Salomonis
xii lapides ex quibus edificauit Helyas altare in holocaustum bouis
xii porte ciuitatis quas contemplati sunt in fine uisionum suarum tam Iohannes quam Ezechiel

(xlviii) *Baptizat Christus manibus apostolorum*
Aque diluuii leuant archam in sublime a terra
Iacob uidet tres greges accubantes iuxta puteum in Mesopotamia
Filia Pharaonis descendens lauat se in flumine
Filii Israel transeunt per medium maris rubri
Aque duodecim fontium in Helym fluunt usibus populi

Archam federis portant Leuite trans Iordanem cedentibus aquis
De alveo Iordanis lapides duodecim tolluntur
Circumcidit Iosue secundo cultris lapideis filios Israel
Lauat se Bathsabee super solarium inspiciente Dauid
Helyas ter aspergere facit holocaustum bouis super altare
Leprosus Naaman lauat se in Iordanem iubente Helyseo
Torrens aquarum inundat a latere templi dextro ubi traducitur Ezechiel nunc ad talos, nunc ad genua, nunc ad renes
Susanna uxor Ioachim se lauat in fonte pomerii
Iudith Olofernem domitura se lauat in fonte Betulie

(xlix) *Sermo domini in monte*

Iacob cum filiis in monte Galaad extendit tabernaculum
Lex datur Moysi in monte Synai expectante populo in campestribus

(l) *Mittit Christus apostolos predicare euaungelium*

Mittit Ioseph fratres suos cum frumento ad domum patris
Mittit Salomon per seruos suos frumentum cesoribus lignorum ad montem Libani

(li) *Petit leprosus a Christo mundari*

Petit Moyses pro Maria sorore sua leprosa
Petit Naaman ad ostium domus Helysei ut curetur a lepra

(lii) *Suscitat Christus filium uidue ad portam Naym*

Suscitat Helyas filium uidue Sareptene
Moralis intelligentia de mortuo extra portam suscitato

(liii) *Excitant discipuli Christum dormientem in puppi*

Excitat gubernator Ionam dormientem in naui
Tropologicus intellectus de excitatione Christi dormientis

(liv) *Eicit Christus legionem a demonioso*

Psallens Dauid cithara fugat a Saul spiritum malignum
Ordinat episcopus exorcistas in ecclesia

(lv) *Porci arepti a demonibus precipitant se in mare*

Egyptii furibundi ruunt in mare rubrum post filios Israel
Moabite currunt ad aquas quas putant sanguinem gladii et occiduntur

(lvi) *Christus ad puteum potum exigit a Samaritana*

Eliezer ad puteum potum petit a Rebecca
Iacob ad puteum cum Rachel cognata sua loquitur

(lvii) *Christus in domo Leui cum publicanis et peccatoribus uescitur*

Iacob comedit cum Laban et seruis eius super aceruum lapidum
Corui deferunt Helye panem et carnes in torrente Carith

(lviii) *Suscitat Christus puellam intra domum patris et matris*

Suscitat Helyseus puerum in ciuitate Suna coram patre et matre
Moralis intellectus de mortua intra domum suscitata

(lix) *Magdalena lauat et unguit pedes Ihesu*

Abigail prosternit se ad pedes Dauid allato xenio
Mulier Sunamites apprehendit pedes Helysei in monte Carmeli
Misticus intellectus de Magdalena et unguento eius de Phariseo et murmure ipsius
Quid sit moraliter pedes Christi lacrimis lotos et crinibus extersos osculari

(lx) *Maria ministrante Martha sedet ad pedes domini*

Angeli ostendunt Loth montem ubi saluetur. ille eligit Segor
Iacob amplectitur Rachel et prefert eam Lye sorori eius

(lxi) *Mittit Ihesus septuaginta duos binos ante faciem suam*

Mittit Iosue duos ut explorent urbem Iericho
Boues Iob bini et bini arant et asine pascuntur iuxta eos

(lxii) *Curatur homo habens manum aridam*

Restituitur Ieroboam regi manus sua que aruerat
Moralis intelligentia de extensione manus aride

(lxiii) *Precipitandus de supercilio montis per medium illorum transit*

Ioseph quem uolebant fratres occidere incolumis abit cum Ysmaelitis
Dauid quem uolebat Saul configere parieti recedit illesus

(lxiv) *Die natali Herodis decollatur Iohannes in carcere*

Pharao cruce pistoris natale suum dehonestat
Iezabel uxor Achab interficit prophetas domini

(lxv) *Corpus Iohannis a discipulis sepelitur*

Sepelitur Aaron pontifex in monte Or
Sepelit Moysen deus nemine conscio

(lxvi) *Satiat Christus hominum quinque milia de quinque panibus ordeiceis et duobus piscibus*

Satiat Helyseus centum uiros de uiginti panibus ordeiceis
Allegoricus sensus de quinque panibus ordeiceis et duobus piscibus
Item aliud misterium de significatione duorum piscium
Misticus intellectus de duodecim chophinis plenis fragmentorum

(lxvii) *Miscet Pilatus sanguinem Galileorum cum sacrificiis eorum*

Helyas occidit sacerdotes Baal post sacrificia
Hieu occidit sacerdotes Baal sacrificantes

(lxviii) *Turris in Syloa cadit super decem et octo homines edificantes eam*

Domus corruens opprimit filios et filias Iob conuiuantes
Elephans turritus corruens opprimit Eleazarum Abbaron

(lxix) *Nichodemus excusat Ihesum apud Iudeos*

Ruben nititur liberare Ioseph de manibus fratrum Suorum
Ionathas excusat Dauid apud Saul patrem suum

(lxx) *Christus digito scribens in terra mulierem adulteram absoluit*

Moyse orante in monte Syna deus quasi digito scribit legem in tabulis lapideis
Daniel in medio seniorum Babilonie corrigit iudicium de Susanna

(lxxi) *Dicit Ihesus turbis. Ego sum lux mundi*
Stat sol contra gabaon ad imperium Iosue in figura Christi
Episcopus ordinat acolitos in ecclesia

(lxxii) *Leuant lapides Iudei contra Christum*
Volunt ciues incense Siceleg lapidare Dauid nondum regem
Iactat Semei lapides contra Dauid regem fugientem a facie Absalon

(lxxiii) *In terram Christus expuit et linit oculos ceci nati*
Quasi furente Dauid coram Achis rege Geth saliua ei decurrit in barbam
Presbiter facit catecuminum ad ostium ecclesie

(lxxiv) *Lacrimatur Christus ad sepulchrum Lazari*
Rex Dauid plorat super tumulum Abner
Moralis intelligencia de fletu Christi super Lazarum tumulatum

(lxxv) *Suscitat Christus Lazarum et soluunt eum discipuli*
Tropologicus sensus de sepultura et suscitatione Lazari
Item tropologicus intellectus de eo quod ligatus prodit et soluitur a ministris

(lxxvi) *Negant Samaritani hospitium Christo*
Negant ciues Gabaa hospitium Leuite de monte Ephraym
Negat Nabal refectionem Dauid et sociis eius

(lxxvii) *Petit mater (filiorum) Zebedei dignitatem filiis suis*
Petit uidua ab Helyseo duobus filiis suis liberationem a facie creditoris
Bibunt Iacobus et Iohannes calicem Christi alter decollatus alter in feruentis olei dolium missus

(lxxviii) *Mittit Christus duos soluere pullum asine*
Abraham duobus seruis deputat custodiam asini donec reuertatur cum Ysaac a sacrificio
Cis pater Saul mittit duos, ipsum uidelicet Saul et puerum cum eo ut querant asinas

(lxxix) *Sedens super pullum suscipitur a turbis cum laude*
Capitur agnus a filiis Israel decima luna et seruatur usque ad xiiii^{mam} immolandus ad uesperam
Mulieres choros ducentes in occursum Dauid extollunt eum laude speciali
Mistica significatio asine et pulli
Allegoricus intellectus de asina et substratis ei uestibus in uia
Item allegoricus intellectus de ramis ab arbore cesis et proiectis in uia
Moralis intelligentia uestimentorum que iumentis imposuerunt apostoli

(lxxx) *Videns ciuitatem flet super eam*
Flet Dauid super Siceleg ipso absente succensam igni
Flet Helyseus coram Azael propter exterminium ab eo perpetrandum in urbibus Israel

(lxxxi) *Vidua duo minuta mittit in gazofilacium*
Allegoricus sensus de diuitibus qui multa iactabant in gazophilacium
Item allegoricus sensus de uidua et eius quadrante id est duobus minutis

(lxxxii) *Maledicit Christus ficulnee non habenti fructum*
Maledicit deus Cayn qui interfecit fratrem suum Abel
Mistica intelligentia de ficu foliosa et infructuosa

(lxxxiii) *Predicante Christo Iudeis gentiles ueniunt eum uidere*
Thamar parit Iude geminos Phares et Zaram
Lapis angularis copulat duos parietes

(lxxxiv) *Temptant Pharisei de censu Cesaris Christum predicantem*
Ciues Sodomorum palpant circa domum Loth non inuenientes ostium
Moralis intelligentia de denario et imagine eius et superscriptione

(lxxxv) *Spondet Iudas Iudeis pro xxx^{ta} argenteis de proditione Christi*
Fratres Ioseph uendunt eum Ismaelitis negotiatoribus pro xx^{ti} argenteis
Achitophel dat consilium Absalon et complicibus eius docens quomodo capiatur Dauid

(lxxxvi) *Lauat Christus pedes discipulorum*
Abraham pedes lauat tribus angelis apud eum hospitantibus
Loth lauat pedes duorum angelorum hospitantium apud se
Laban lauat pedes camelorum quos adduxit Eliezer seruus Abrahe
Episcopus ordinat subdiaconos in ecclesia

(lxxxvii) *Corpus et sanguinem suum communicat discipulis*
Melchisedech offert panem et uinum Abrahe reuertenti a cede quatuor regum
Renes accincti filii Israel comedunt carnes agni paschalis cum lactucis agrestibus
Manna pluit de celo et colligunt illud filii Israel
Dauid saltans coram archa portat se ipsum manibus propriis
Naaman mundatus a lepra reportat de terra sancta onus duorum burdonum
Episcopus ordinat diaconos in ecclesia

(lxxxviii) *Exit in montem oliuarum oraturus*
Dauid fugiens a facie Absalon ascendit cliuum oliuarum tristis
Helyas ascendit in montem Carmeli oratione sua daturus pluuiam

(lxxxix) *Iudas osculo Christum prodit*
Ioab tenens mentum Amase tanquam osculaturus stringit ferrum in uiscera eius
Elephans innixus arbori clam succise cadit et traditur in manus uenatorum

(xc) *Petrus gladio Malchum impetit et corripitur a Christo*
Prohibet Dauid Abisai ne occidat Saul dormientem in tentorio
Prohibet Dauid Abisai ne occidat Semei maledicentem et lapides mittentem
Prohibet Helyseus regem Israel ne occidet hostes suos latrunculos Syrie
Misticus intellectus de uindicta Petri quam exercuit in Malchum seuientem

(xci) *Comprehenditur Christus a Iudeis*
Abraham uitulum apprehendit et tradit eum puero iugulandum et coquendum
Fratres Ioseph comprehendunt eum uenientem in pascua
Philistei comprehendunt Samson repulsum a gremio Dalile
Archa dei capitur a Philisteis

(xcii) *Ligant Christum Iudei*
Ligat Abraham Ysaac filium suum ut immoletur
Ligat Dalila Samsonem dormientem in gremio suo

(xciii) *Adolescens territus reiecta sindone nudus fugit*
Ioseph reiecto pallio in manu domine sue fugit foras
Moralis intelligentia de abiectione sindonis et fuga facta

(xciv) *Stans coram Anna pontifice Christus accipit alapam a ministro*
Stans Micheas coram Achab a Sedechia percutitur in maxilla
Tropologicus intellectus de alapa data Christo

(xcv) *Falsi testes impetunt Christum*
Fratres Ioseph tunicam ipsius tingunt in sanguine hedi
Domina Ioseph contempta accusat eum apud uirum suum

(xcvi) *Iudas laqueo se suspendit*
Achitophel proditor Dauid laqueo se suspendit
Absalon pendet de quercu et mulus pertransit

(xcvii) *Flagellatur Christus*
Adam et Eua agnoscunt se nudos et erubescunt
Sathan percutit Iob ulcere pessimo a planta pedis usque ad uerticem

(xcviii) *Coronatur spinis et uelata facie multipliciter illuditur*
Dicit deus Ade Spinas et tribulos germinabit tibi terra
Aries inter uepres heret cornibus post tergum sacrificantis Abrahe
Philistei eruunt Samsoni ambos oculos eius
Pueri illudunt Helyseo dicentes Ascende calue

(xcix) *Baiulat sibi crucem Ihesus*
Abraham stat sub arbore iuxta tres angelos discumbentes
Ysaac portat sibi ligna pergens cum patre ad immolandum
Linit Israelita de sanguine agni superliminare domus et utrumque postem stans in ostio et tenens uas in manu
Moyses mittit lignum in aquas Mara quod in dulcedinem eas conuertit
Super altare holocausti cremantur uictime in figuram crucis
Vidua Sareptena colligit duo ligna in aduentu Helye
Helyseus mittens lignum in aquam ferrum reuocat de profundo
Vir portans atramentarium scriptoris ad renes signat T in frontibus israelitarum
Nauis per mare uelificat in forma crucis uirga trans malum posita

(c) *Matrone lamentantur sublatum sibi Ihesum*
Filia Iephte cum sodalibus plangit uirginitatem suam in montibus
Filie Syon cum Dauid plangunt mortem regis Saul

(ci) *Crucifigitur Christus*
Deus ponit carnem pro costa de qua fecerat mulierem
Eua illicite manum suam extendit ad fructum arboris uetite
Deus induit Adam et Euam tunicis pelliceis in signum mortis
Cain occidit Abel fratrem suum in agro
Abraham offert Ysaac filium suum super struem lignorum in altari
Rebecca circumdat manibus Iacob filii sui pelliculas hedonum
Fratres Ioseph nudant eum tunica talari et polimita
Occiditur agnus paschalis a filiis Israel
Litura de sanguine agni in utroque poste, cum tropologico intellectu
Vitulus in leuitico ad ostium tabernaculi immolatur
Botrum de terra Chanaan portant in uecte duo uiri ad filios Israel
Vacca rufa crematur extra castra
Serpens eneus exaltatus in deserto sanat uulneratos ab ignitis serpentibus

Samson concussus duabus columpnis moritur et opprimit principes Philistinorum
Ionas sorte deprehensus uolens proicitur in mare
Phenix collectis sibi lignis aromaticis spontaneo conflagratur incendio
Episcopus ordinat presbiteros in ecclesia

(cii) *Deridetur in cruce pendens a principibus sacerdotum*

Cham deridet pudenda patris sui detecta et nunciat duobus fratribus suis
Michol uidens Dauid nudatum coram archa dei despicit eum in corde suo
Uxor Iob conuiciatur ei inter flagella et obiurgat eum
Anna uxor Tobie uirum suum cecitate et inopia laborantem uerbis exacerbat

(ciii) *Commendat Christus matrem suam Iohanni*

Commendat Dauid profugus patrem suum et matrem regi Moab
Commendat Tobias pater Tobie filio matrem eius in custodiam

(civ) *Crucifixus orat pro interfectoribus suis*

Ysaac deprecatur dominum pro uxore sua sterili
Angelus a Iacob superatus in lucta benedicit si recedendo

(cv) *Perforato latere Christi exit sanguis et aqua*

Format deus Euam de latere Ade dormientis
Petram in deserto Moyses uirga bis percutit et ipsa fundit aquas

(cvi) *Velum templi scinditur*

Scindit Ruben uestimenta sua non inueniens Ioseph in puteo
Scindit Iacob uestimenta sua agnita tunica Ioseph

(cvii) *Scinduntur petre et mortui resurgunt*

Helyseus mortuus suscitat mortuum tangentem ossa eius
Moralis intelligentia de scissione petrarum

(cviii) *Spolians Christus infernum educit animas iustorum alligato Sathana*

Abram reducit Loth qui captiuus abductus fuerat
Moyses percussum Egyptium abscondit sabulo
Virga Aaron deuorat uirgas magorum sub specie colubri
Victor Iosue crucifigit regem urbis Ahi
Gedeon liberat Israel de manu Madian in trecentis armatis
Samson portas urbis Gaze auellit et asportat
Dauid in pascuis eripit arietem de ore ursi
Banaias in cisternam descendens occidit leonem
Daniel occidit draconem quem colebant Babilonii
Suspenditur Aman Agagites in cruce quam parauerat Mardocheo

(cix) *Sepultum Christum operiunt lintheis Nichodemus et Ioseph*

Deus requiescit ab omni opere suo die septimo sanctificans illum
Sem et Iapheth operiunt pudenda patris sui Noe
Iacob et Esau sepeliunt Ysaac patrem suum in spelunca duplici
Ioseph a fratribus mittitur in cisternam ueterem
Samson dormit in lectulo cum amica sua intra Gazam
Michol uxor Dauid operit statuam in lecto loco ipsius
Ieremias demissus per funes descendit in lacum
Cetus preparatus a deo deglutit Ionam proiectum in mare

(cx) *Surgit Christus de sepulchro*

Euigilans Noe de uino quo inebriatus est expergiscitur
Videt per sompnium Ioseph manipulum suum surgere stare et adorari a manipulis fratrum
Eductus Ioseph de carcere tondetur et constituitur dominus Egypti
Samson uisitat cadauer leonis occisi
Dauid per fenestram fugiens saluatur custodientibus domum militibus
Cetus Ionam euomit uiuum in siccum litus contra Niniuen
Catulus leonis rugitu patris excitatus surgit
Phenix nouus renascitur de cineribus fenicis exusti

(cxi) *Apparens discipulis dicit Pax uobis*

Manifestans se Ioseph fratribus suis dicit Ego sum Ioseph
Episcopus ab altari conuersus ad populum dicit Pax uobis

(cxii) *Insufflat Christus Apostolis et dicit Accipite spiritum sanctum*

Inspirat deus in faciem prothoplasti spiraculum uite
Sanctificans presbiter fontem baptismatis inspirat ter

(cxiii) *Gustat de fauo mellis et asso pisce*

Samson mel sumptum de ore leonis comedere dans partem patri et matri
Iob testa saniem radit sedens in sterquilinio

(cxiv) *Conuescens dicit Petro Pasce oues meas*

Surgens Dauid mane commendat gregem custodi
Mistica intelligentia de pastu ouium Christi

(cxv) *Ascendens Christus in celum benedicit discipulis*

Enoch translatus a deo non comparet ulterius
Ioseph ascendit cum gloria super currum Pharaonis secundum
Iacob migraturus benedicit filiis suis ualedicens singulis
Passer oblatus pro expiatione lepre uiuus auolat in aera
Summus pontifex intrat in sancta sanctorum non sine sanguine
Hircus emissarius portans peccata populi uadit in desertum
Helyas igneo curru subuectus pallium suum relinquit Helyseo
Sol in horologio Achaz decem lineis reuertitur per quas ante descenderat

(cxvi) *Quatuor euangeliste*

Quatuor flumina manantia de paradiso rigant uniuersam terram
iv ascendunt ad deum cum lxx^{ta} senibus. Moyses Aaron Nadab et Abiu
iv anulis aureis subuehitur archa federis
iv ydriis iubet Helyas perfundere bouis holocaustum super altare
iv leprosi exclusi a Samaria transeunt ad castra Syrie
iv animalia pennata uidet Ezechiel
iv quadrigas uidet Zacharias exire de medio duorum montium ereorum
iv pueri Hebrei precellunt sapientibus Babilonis
iv climata mundi repleta Christi euaungelio

(cxvii) *Datur in cenaculo spiritus sanctus apostolis cum sono et igne*

Bibunt fratres Ioseph coram ipso uinum et inebriantur cum eo
Datur lex in monte Synai fumante ubi ceperunt audiri tonitrua, micare fulgura
Ungitur Aaron in pontificem ubi descendit unguentum a capite in barbam, de barba in horam uestimenti
Datur de spiritu Moysi lxx senioribus et prophetant

(cxviii) *Loquuntur apostoli uariis linguis adunatis ex omni natione Iudeis*

Confusis linguis ad turrim Babel dispersi sunt edificantes
Pecunia argentea reperta est in saccis fratrum Ioseph cum deferrent frumentum

(cxix) *Conuersi per apostolos quidam Iudeorum suscipiunt fidem Christi*

Iacob claudicat in uno pede in femore percussus ab angelo
Veniunt fratres Ioseph ad eum accipere precio frumentum
Galaadite requirentes Iepthe quem eiecerant eligunt eum in principem sibi
Filii Israel reducunt Dauid regem in Ierusalem a quo prius recesserant

(cxx) *Accusantur apostoli publice in concilio quod predicent Christum*

Accusatur Thamar apud Iudam eo quod conceperit
Accusat Doech apud Saul sacerdotes domini super amicicia Dauid

(cxxi) *Flagellantur apostoli*

Mittit Moyses in crateras de sanguine xii uitulorum in Exodo
Pelles arietum rubricate operiunt tabernaculum testimonii

(cxxii) *Saulus secus pedes gamalielis legem discit*

Filiis Iacob profectis ut afferant triticum Beniamin cum patre domi residet
Tribus Beniamin expugnata in sescentos uiros propter Paulum apostolum reseruatur

(cxxiii) *Stephanus lapidibus oppressus orat pro lapidantibus se*

Lapidatur Naboth falso testimonio et iniquo iudicio condempnatus
Lapidatur Zacharias propheta propter uerbum domini
Crucifixus Christus orat pro crucifigentibus se
Lapidatur Paulus a Iudeis, recipiens quod intulit Stephano

(cxxiv) *Saulus persequitur Christianos trahens et tradens in custodiam*

Agar ancilla Sare iam grauida despicit dominam suam
Ysmael ludit cum Ysaac impie tanquam persequens eum, unde Sara irascitur
Esau uenit obuiam Iacob fratri suo cum quadringentis uiris
Producitur Thamar pregnans ut comburatur

(cxxv) *Imponentibus apostolis manus accipiunt credentes spiritum sanctum et linguis loquuntur*

Imponente Moyse manum repletur Iosue filius Nun spiritu sapientie
Linit episcopus frontes baptizatorum confirmans eos karismate spiritus sancti

(cxxvi) *Conuertitur Saulus appropinquans Damasco*

Deus prohibet Laban ne dure loquatur contra Iacob
Ioseph recidens in collum fratris sui Beniamin amplectitur eum
Arguit Moyses Hebreum qui fratri suo faciebat iniuriam
Tobias inuadentem se piscem trahit in siccum

(cxxvii) *Saulus predicat in synagoga Damasci*

Elyezer seruus Abrahe donat inaures et armillas Rebecce
Scyphus argenteus inuenitur in sacco Beniamin
Iacob prophetat filio suo Beniamin. Beniamin lupus rapax mane comedet predam et ad uesperam diuidet spolia
Molaris dens mandibule fundens aquam recreat membra Samsonis sicientis

(cxxviii) *Saulus per murum in sporta summissus euadit*

Raab meretrix duos nuncios Iosue fune coccineo per fenestram submittit
Michol filia Saul uirum suum Dauid per fenestram deponens sinit abire

(cxxix) *Confederantur Petrus et Paulus ut unus in circumcisione alter in gentibus predicet*

Fecit deus duo magna luminaria, luminare maius ut preesset diei, luminare minus ut preesset nocti
Duobus tubis argenteis conuocat Moyses populum ad tabernaculum federis
Due uacce fete mugientes trahunt in plaustro archam dei ad lapidem adiutorii
Achimaas et Ionathas lęgati constituuntur ut renuntient Dauid de statu rerum in Ierusalem
Duas columpnas Iachin et Booz statuit Salomon in uestibulo templi
Duo filii olei splendoris apud Zachariam assistentes domino
Duo montes erei apud eundem prophetam de medio quorum egrediuntur quadrige quatuor
Duo ubera sponse sicut duo hinnuli capree gemelli
Duo cardines, australis et septentrionalis, mundum continent uniuersum

(cxxx) *Conuersantibus Paulo et Barnaba Antiochie per annum et crescente fidelium numero discipuli cognominantur a Christo Christiani*

Dicit Adam de uxore sua Eua sibi adducta Hec uocabitur uirago quoniam de uiro sumpta est
Angelus luctatus cum Iacob mutato nomine uocat eum Israel

(cxxxi) *Paulus et Barnabas dicunt Iudeis Quia repulistis uerbum dei, ecce conuertimur ad gentes*

Cain fratricida contumacie desperationem adiciens egreditur a facie domini
Agar ancilla Sare fugiens dominam suam uenit iuxta puteum
Esau tardante circa uenationem Iacob preueniens benedicitur
Iacob cancellatis manibus benedicit Effraim et Manasse
Manum suam Moyses retractam a sinu contemplatur esse leprosam
Lumbare Ieremie absconditum in flumine Euphrate computrescit
Stans super murum litum deus apud Amos prophetam trullam cementarii ponit in terram
Vasti regina dedignatur intrare ad mandatum regis Assueri

(cxxxii) *Titus et Vespasianus obsessam Ierusalem depopulantur*

Ioseph affligit fratres suos recludens eos in carcere
Filia sacerdotis in lege ueteri stupri rea flammis exuritur
Duo ursi lacerant xl duos pueros illusores Helysei
Nabuchodonosor euertit Ierusalem in transmigrationem Babilonis
Ezechiel abrasos gladio pilos capitis sui et barbe comburit, concidit, dispergit

(cxxxiii) *Heretici in ecclesia Catholicorum fidem impugnant*

Facta est rixa inter pastores gregum Abram et Loth
Pastores uim inferentes septem filiabus sacerdotis Madian repellunt eas a puteo
Mandat prohibitorie deus in lege Non ascendes per gradus ad altare meum
Nadab et Abiu filii Aaron arreptis thuribulis ignem alienum offerunt coram domino
Vulpes colligate ad caudas igne tracto succendunt segetes Philistinorum
Amici Iob loquentes dum deum defendere nituntur offendunt

(cxxxiv) *Antichristus ostendens se tanquam sit deus prophanat cultum Christiane religionis*

Sopor irruit super Abram uespere et horror magnus et tenebrosus inuadit eum
Filius Salumith de tribu Dan ex patre Egiptio iurgatur in castris cum uiro Israelita
Dicit deus Zacharie prophete Sume tibi uasa pastoris stulti
Cornu paruulum inter x cornua quarte bestie Danielis oritur habens oculos quasi hominis et os loquens ingentia

(cxxxv) *Reliquie Israel ad Christum conuertuntur predicatione doctorum, maxime Enoch et Helye*

Agar ancilla Sare monita ab angelo redit ad dominam suam
Abraham cum Ysaac filio suo reuertitur ad duos pueros suos expectantes cum asino
Venit tandem Esau benedicendus a patre postquam data est benedictio Iacob
Iacob iam senex uenit cum filiis et tota progenie ad Ioseph ut pascatur ab eo
Moyses qui abhorrens fugerat conuersus apprehendit caudam colubri qui uertitur in uirgam
Manus Moysi extra sinum leprosa iam reducta in sinum ostenditur munda
Maria soror Moysi extra castra aliquamdiu leprosa tandem mundata reuocatur
Abner reducit ad Dauid Michol uxorem suam quam olim sibi desponderat

(cxxxvi) *Purgatur et innouatur orbis terrarum per ignem*

Aque diluuii operiunt terram transcendentes cacumina montium xv cubitis
Clibanus fumans apparet Abrahe in horrore uespertine uisionis

(cxxxvii) *Resurrectio mortuorum generalis*

Dicit deus Abrahe Suspice celum et numera stellas si potes sic erit semen tuum
Ioseph iam agnitus dat singulis fratribus suis binas stolas
Visio prophetica de ossibus mortuorum qui superductis sibi neruis cute et carnibus reuixerunt
Argumentum resurrectionis a natura rerum quod de semine prodeant herbe et arbusta

(cxxxviii) *Sedens Christus in iudicio statuit electos a dextris reprobos a sinistris*

Imponit Adam pro arbitrio suo nomina cunctis animantibus terre
Arcus ponitur in nubibus celi post diluuium in signum futuri iudicii
Lampas ignis transit inter duas diuisiones sacrificii uespertini Abrahe
Ioseph discutit sompnia duorum in carcere, pincerne et pistoris
Gladio diiudicat Salomon causam duarum mulierum disceptantium de oppressione paruuli
Si ceciderit lignum ad austrum aut ad aquilonem in quocunque loco ceciderit ibi erit
De duobus in lecto ad molam in agro unus assumetur et alter relinquetur
Crucifixus dominus in medio duorum latronum eum qui a dextris confitetur acceptat

The Cult of St. Oswald in Northern Italy

By the Rev. E. P. BAKER, M.A., F.S.A.

[*Read 7th April 1949*]

FIVE buildings in Venice are cited by Ruskin as illustrative of 'the last degradation of the Renaissance. San Moisé is the most clumsy, Santa Maria Zobenigo the most impious, St. Eustachio the most ridiculous, the Ospedaletto the most monstrous, and the head at Santa Maria Formosa the most foul.'[1] In respect, however, of St. Eustachio (or S. Stae as it is known in the Venetian dialect), the verdict is mitigated on a later page, where we are told that the church is remarkable for the dramatic effect of the group of sculpture on its façade.[2] Would this effect, we wonder, have been further enlivened for Ruskin had he been aware that 'our own Saxon Oswald'[3] (as he speaks of him elsewhere with a touch of affection) was represented by a large baroque statue in the niche on the left-hand side?

The church of S. Stae, an old foundation on the south bank of the Grand Canal (pl. xxx, *a*), was rebuilt towards the end of the seventeenth century, and completed a little later by a façade with the aid of a legacy from the Doge Alvise Mocenigo, who died in 1709.[4] From the twelve designs submitted for this façade that of Domenico Rossi (pl. xxx, *b*) was chosen, and with him was associated a team of sculptors, of whom individually, very little appears to be known.[5] An engraving of the design published shortly afterwards shows that figures of St. Paul and St. Peter were originally intended to occupy the niches now filled by St. Oswald and St. Sebastian,[6] but the archives of the Mocenigo family unfortunately provide no clue to the change of plan.[7] Let us assume, if we may, that a relative of the late Doge intervened to procure that saints of his own choice might take the place of the two apostles proposed by the architect, for later in this paper we shall discover elsewhere an almost exactly similar exchange.[8] However that may be, every English visitor to Venice since that time has passed within view of a statue of the king of Northumbria (pl. xxxii, *a*).[9]

---

[1] J. Ruskin, *Stones of Venice*, iii (ed. 1903), p. 315.

[2] *Op. cit.*, p. 124.

[3] *Val d'Arno* (ed. 1900), p. 89.

[4] F. Corner, *Notizie storiche delle chiese e monasterie di Venezia* (Padua, 1758), p. 390; G. Lorenzetti, *Venezia e il suo estuario* (Venice, 1927), p. 446.

[5] Giuseppe Torretto, Antonio Tarsia, Pietro Baratta, Antonio Corradini, Giuseppe and Paolo Groppelli, Paolo Callalo, Matteo Calderon, and Giovanni Cabianca. Except for Corradini, who is thought on stylistic grounds to have been responsible for the three statues on the pediment, and for Torretto, who has been claimed for the central group over the door, we do not know how the work was shared out, as the records are silent. G. Mariacher, 'Lo scultore Antonio Corradini', in *Arte Veneta*, i (1947), pp. 263 ff. Twenty thousand ducats were left for building the façade in Istrian marble, with statues of Carrara marble calculated to resist the blast of the north wind.

[6] V. M. Coronelli, *Singolarità di Venezia* (Venice, n.d.), p. 136. Cf. E. Armao, *Vincenzo Coronelli* (Florence, 1944), p. 175, where the date of publication is given as 'presumibilmente nel 1708'. It is likely, however, to have been two or three years later, as the design for S. Stae is dated 1710.

[7] I have to thank Signor Fabio Mauroner for his kindness in making inquiries on this point.

[8] There is a possibility that the change may have been prompted by an outbreak of plague. St. Sebastian was invoked in times of pestilence, as was St. Oswald at this period.

[9] This photograph was appropriately taken for me by Signor Osvaldo Böhm. The name of our saint is fairly uncommon in Venice to-day, and Signor Böhm tells me that he is a namesake of 'Oswald lord Nelvil, pair d'Écosse', the hero of Madame de Staël's novel, *Corinne, ou l'Italie*.

That we are intended to see St. Oswald in this mildly ecstatic monarch, clothed in a heavily undulating toga, there can be no doubt. On his left hand is perched the raven, an almost inevitable companion of St. Oswald in both German and Italian art, and further, indeed conclusive, support for the identity is to be found within the church, where the third altar on the right is adorned with a painting of the Glorification of St. Oswald by Antonio Balestra (pl. XXXII, *b*).[1] Over his gilded armour a red mantle is loosely swathed as the enraptured saint is borne upwards in a whirl of clouds and cherubs. The raven with a ring in its beak hovers unobtrusively close to his right knee, and, if further proof be needed, we can see on the altar rails below an alms-box inscribed 'S. Osvaldo'. Few coins (or bank-notes), I fear, are dropped into this box to-day, though I am told that the cult of St. Oswald at this altar lasted down to the First World War. Efforts to revive it in later years met with no success, as the younger generation was no longer interested in a remote king of Northumbria, and the appeal he had once made two centuries ago was quite forgotten. The wiser virgins of the parish are said to have ensured their matrimonial prospects by filling St. Oswald's lamp with oil, but even this little act of devotion has finally expired.[2] There can be little doubt that St. Oswald was a popular saint here in the eighteenth century, and in the library of the Correr Museum are some tiny pamphlets, which throw a ray of light upon this exotic cult. A sermon delivered in honour of our saint at S. Stae in 1771 is little more than a display of stilted and turgid eloquence, in which St. Oswald is commended as a dispenser of civilization and good government.[3] An office to be recited on the patronal festival was printed in 1783 and again in 1801 and 1831.[4] Here we are told that every morning in the octave of the feast a relic of the famous king St. Oswald was exposed upon his altar, and later in the day, after an exposition of the Blessed Sacrament, a moral discourse on the virtue of the saint was pronounced, and in the prayer which followed we find that St. Oswald was invoked as one who had wrought the cure of many afflicted by diverse diseases. It will appear, therefore, that St. Oswald was venerated as a saint whose help was valued in those waves of plague and fever, which periodically swept over Venice down into the nineteenth century, and it may not be altogether fortuitous that this little office was printed in years when there had been outbreaks of some kind of pestilence.[5] In 1782

---

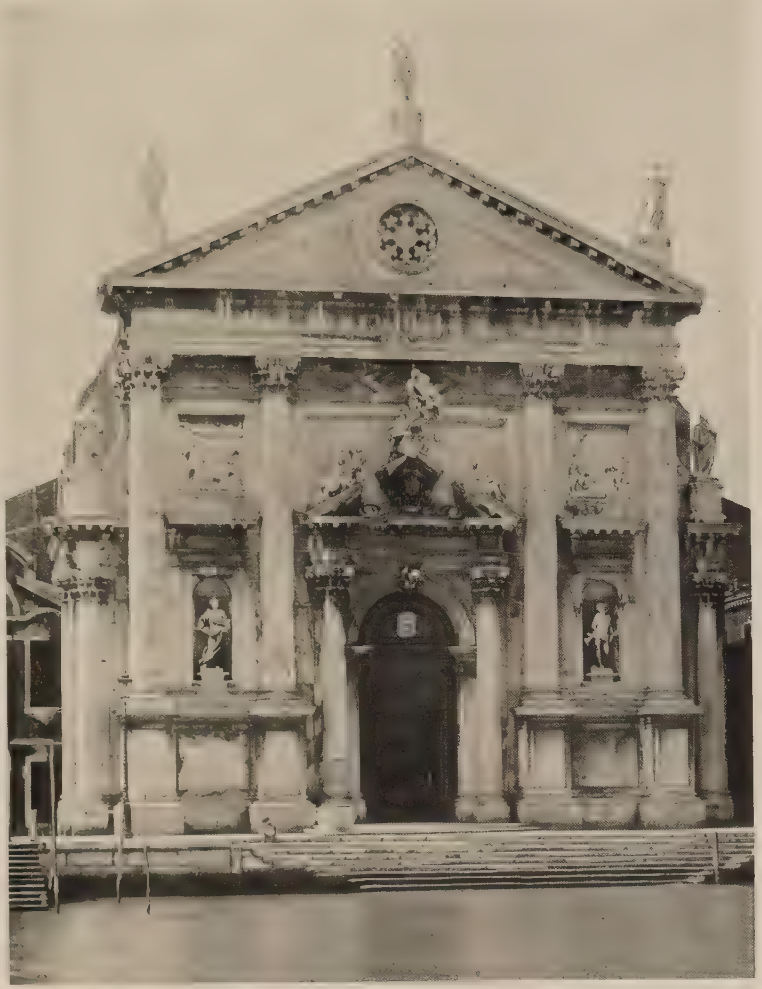
[1] Lorenzetti, *op. cit.*, p. 446, has mistaken this picture for a Glorification of St. Eustace, and the error is repeated in G. Damerini, *I Pittori Veneziani del '700* (Bologna, 1928), p. 214, but the identity is vouched for by several of the older authorities. M. Boschini, *Descrizione di tutte le pubbliche pitture della città di Venezia* (Venice, 1733), p. 439 ('La pala di Sant' Osvaldo è opera celebre di Antonio Balestra'); *Della Pittura Veneziana e delle Opere Pubbliche de' Veneziani Maestri* (Venice, 1771), p. 435; G. Moschini, *Guida per la città di Venezia*, ii (Venice, 1815), p. 143; *Il forestiere istruito nelle cose più pregevoli e curiose antiche e moderne della città di Venezia*, ii (Venice, 1819), p. 390.

[2] The lamp is still lit and mass is said at this altar on 5th August.

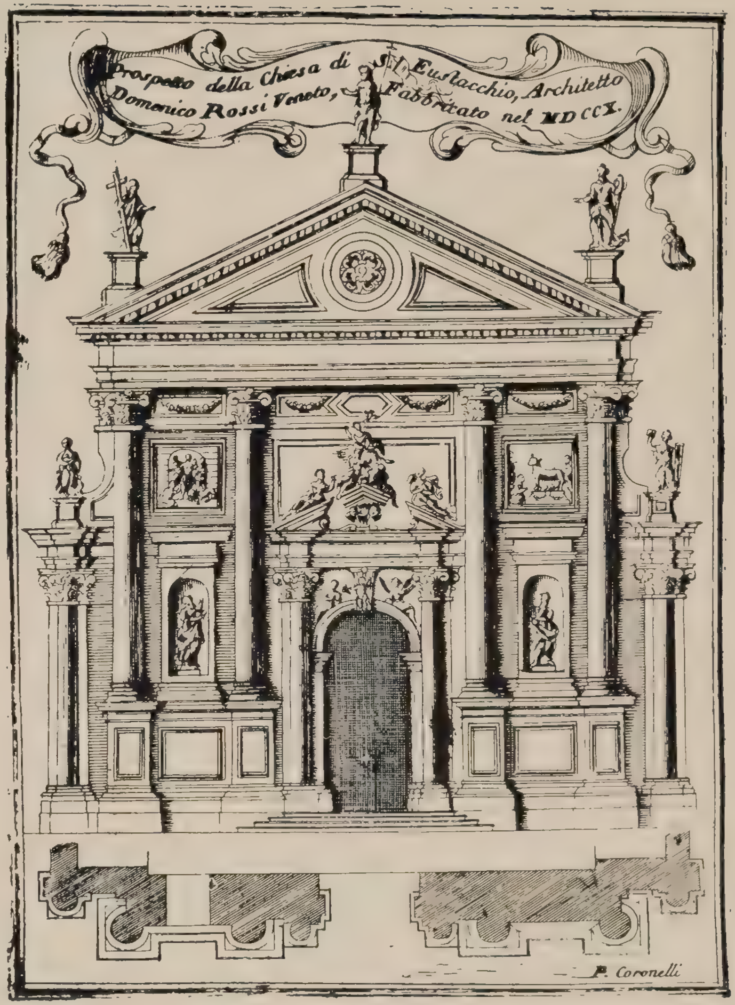
[3] G. Manzoni, *Orazione panegirica in onore di S. Osvaldo Re di Northumberland recitata nella chiesa P. e C. di S. Eustachio di Venezia l'anno 1771* (Ferrara, 1774). The preacher, who was a 'member of the Electoral Academy of Mannheim etc. etc.' is said to have gained distinction for his censure of the abuses of the carnival and for a set of stories intended to teach children the rules of Italian grammar.

[4] *Pratica divota nell' Ottavario e nella Solennità che si celebra nelle chiesa di Sant' Eustachio ad onor del Glorioso Sant' Osvaldo Re di Northumbria, Protettore de' gravamente Infermi, e principalmente Febbricitanti* (Venice, 1783, 1801, and 1831).

[5] G. Federigo, *Topografia fisica-medica della città di Venezia*, iii (Padua, 1832), pp. 53 f., 57. Venice enjoys a notably healthy climate, but was the victim of diseases imported through its trade with the East. The plague is said to have broken out no less than seventy-three times in the life of the Republic. P. Molmenti, *La storia di Venezia nella Vita Privata*, ii (Bergamo, 1911), pp. 87 ff.

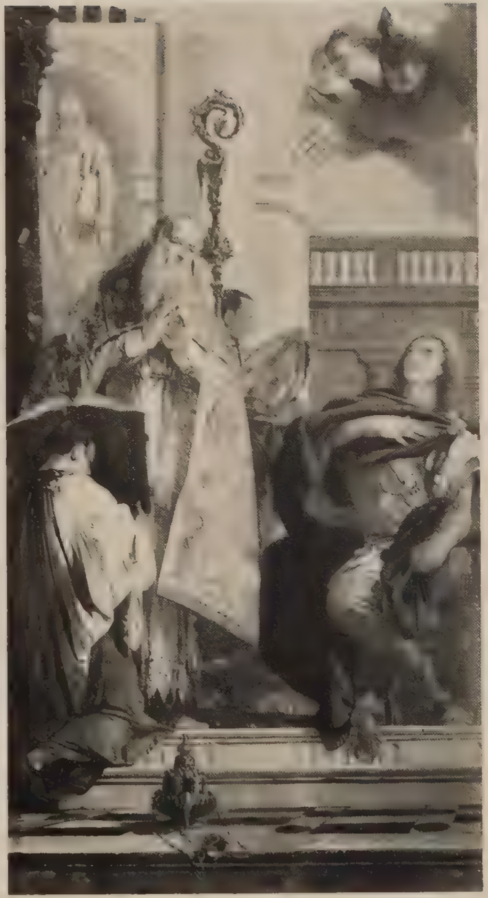


a. S. Stae, Venice

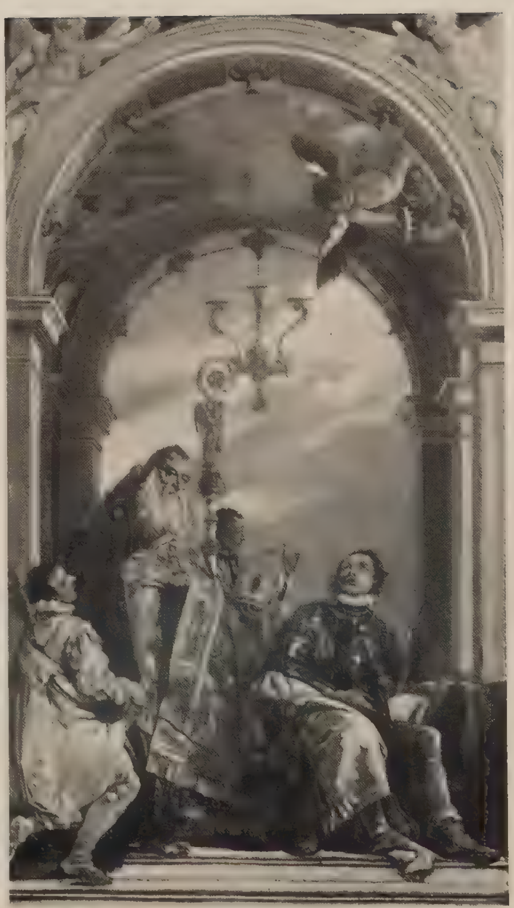

Prospetto della Chiesa di S. Eustacchio, Architetto
Domenico Rossi Veneto, Fabbricato nel MDCCX.
P. Coronelli

b. Rossi's design for S. Stae, Venice

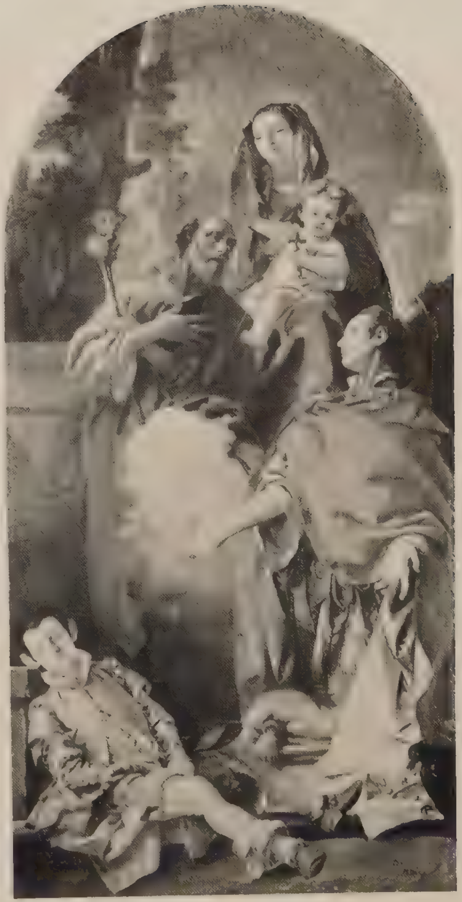
Published by the Society of Antiquaries of London, 1951



a. G. B. Tiepolo. St. Maximus and St. Oswald. Formerly in S. Massimo, Padua



b . G. B. Tiepolo. St. Maximus and St. Oswald. Accademia Carrara, Bergamo

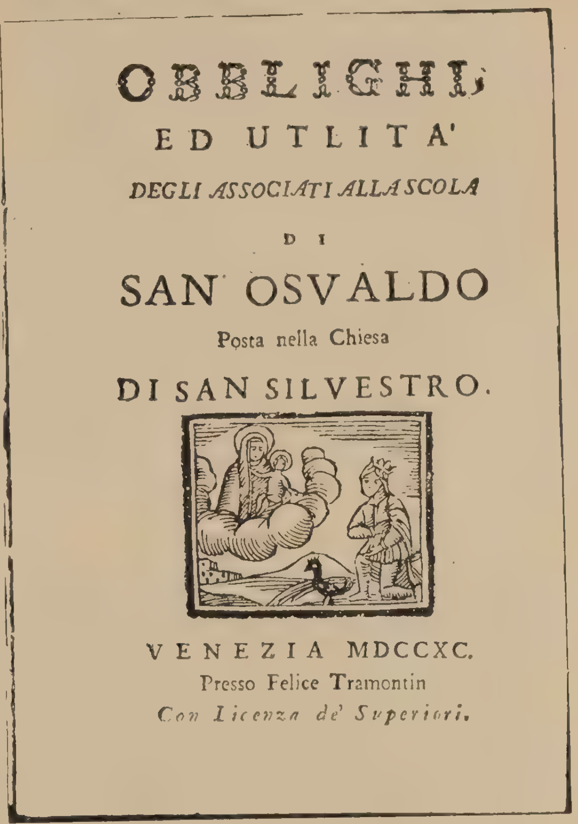


c. Domenico Tiepolo. Holy Family and St. Oswald. Merlengo

Published by the Society of Antiquaries of London, 1951

there was an immense number of sick suffering from gastric fever and bronchial catarrh. In 1801 typhus and smallpox were rampant, developing in March and continuing into August of that year, while 1831 was the year of the great cholera epidemic.[1]

Another centre of devotion to St. Oswald was the church of S. Silvestro, but here the tradition has long died out.[2] The church was largely rebuilt in the middle of the last century, and the only trace now left there of the cult is a highly indifferent picture (possibly early nineteenth-century) now to be seen on the west wall of the baptistery chapel.[3] Perhaps it was separated from the altar, to which it belonged, after the restoration. The king clad in blue tunic and red mantle gazes upwards extending his arm towards the raven, ring in beak, which flies towards him. More may be learned once again in the Correr Museum library from a little office book dated 1790 for the *scola* of St. Oswald in the church of S. Silvestro, bearing on the title-page a small woodcut of the saint on his knees before the Virgin and Child (fig. 1). An indulgence was granted to all who visited the chapel of the saint from the first vespers of the vigil, viz. 4th September [*sic*], until sunset the following day, being the feast of the saint. Protection in time of *l'Infermità Maligna* was among the benefits received, and members of the confraternity, who paid an augmented subscription of 48 solidi per annum, were assured of certain privileges at their funerals.


OBBLIGHI

ED UTLITA'

DEGLI ASSOCIATI ALLA SCOLA

DI

SAN OSVALDO

Posta nella Chiesa

DI SAN SILVESTRO.

VENEZIA MDCCXC.

Presso Felice Tramontin

Con Licenza de' Superiori.

FIG. 1.

The only other evidence of interest in St. Oswald I have found in Venice is the attribution of a picture by Bonifazio Veronese in the Accademia. A long series of pictures of the saints was commissioned from the artist and his school in the middle of the sixteenth century for the Palazzo dei Camerlenghi, and one of this series (no. 280 in the Accademia) has been traditionally described as St. Matthew and St. Oswald.[4] It was the custom of the outgoing magistrates to present pictures of their patron saints with their arms and their initials, and the one we are concerned with is thus identified as having been painted to the order of Alvise Barbarigo, who completed his term of office in 1534, and Matteo Barbarigo in 1539.[1] It follows that the figure of the king is St. Louis of France. The error may have crept in when Boschini first noted the picture in the middle of the seventeenth century, at that time still in the Palazzo dei Camerlenghi, as representing St. Oswald.[2] In his day St. Oswald may have been fairly familiar in Venice, and Boschini without much reflection described the royal companion of the evangelist as the king of Northumbria, instead of the king of France.

---

[1] E. A. Cicogna, *Saggio di Bibliografia Veneziana* (Venice, 1847), p. 750. It may be noted (p. 749) that there was a pestilence in 1711, bearing out, perhaps, our conjecture for the change of statues on the façade of S. Stae.

[2] Lorenzetti, *op. cit.*, pp. 578 f.

[3] Not worthy of mention by Lorenzetti. In 1949 the picture was concealed behind an enormous tabernacle. We may note in passing that another English saint is commemorated in S. Silvestro. T. Borenius, *St. Thomas Becket in Art* (1932), p. 103. St. Oswald and St. Thomas, as we shall see below, were both venerated at Rovereto.

[4] e.g. cf. the Catalogues of 1867, 1874, 1891, and 1896. The first edition I have seen to give the correct attribution is that of 1902. The article on St. Oswald in the *Enciclopedia Universal*, xl (Barcelona, *c.* 1920), p. 995, is illustrated with this picture.

Elsewhere in the Veneto there is evidence that the cult of St. Oswald was widespread in the eighteenth century. In the church of S. Massimo at Padua, which was destroyed in the Second World War, the high altar was formerly adorned by a picture of St. Maximus, bishop of Padua, and St. Oswald from the hand of Giovanni Battista Tiepolo (pl. XXXI, *a*).[3] The venerable St. Maximus is reading from a book supported on the head of an acolyte, while St. Oswald is seated on his left, his head raised with a look of rapt devotion, and on his left hand, which holds a sceptre, is perched the identifying raven with its ring. I imagine that the bird was revealed when the picture was cleaned at Venice after the last war, or else unnecessary doubts about the name of the youthful monarch would never have been raised.[4] Sack was convinced that St. Oswald was intended by a sketch in a private collection at Milan,[5] where the bird is visible, but the older writers are in agreement that St. Maximus and St. Oswald were the subjects of the picture, and their testimony should not have been so lightly disregarded.[6] Two other identical, and probably earlier, sketches exist for this picture, one in the National Gallery,[7] and the other in the Accademia Carrara at Bergamo (pl. XXXI, *b*).[8] Besides other variations the figure of St. Oswald differs considerably from that at Padua.

---

[1] G. Ludwig, 'Bonifazio di Pitati da Verona, ein archivalische Untersuchung', III, in *Jahrbuch des königlich preussischen Kunstsammlungen*, xxiii (1902), pp. 36 ff.

[2] *Op. cit.*, p. 279 ('nel nicchio dell' angolo S.S. Marco ed Osvaldo'). It is found in the first edition of Boschini's book published in 1664 as *Le minere della pittura*, p. 270. On the other hand, it may be noted that only one of the eighteenth-century parish priests in Venice had Oswald for his Christian name—Oswaldus Zen, rector of S. Moisè in 1776. G. B. Gallicciolli, *Delle memorie Venete antiche*, viii (Venice, 1795), p. 335.

[3] St. Oswald is said to be a co-patron of the church. *Inventario degli oggetti d'arte d'Italia*, VII. *Provincia di Padova, Comune di Padova* (n.p., 1936), pp. 139 ff. There is a record that Dr. Cogollo, a parish priest, whose tomb dated 1745 is in front of the altar, purchased the picture about 1742.

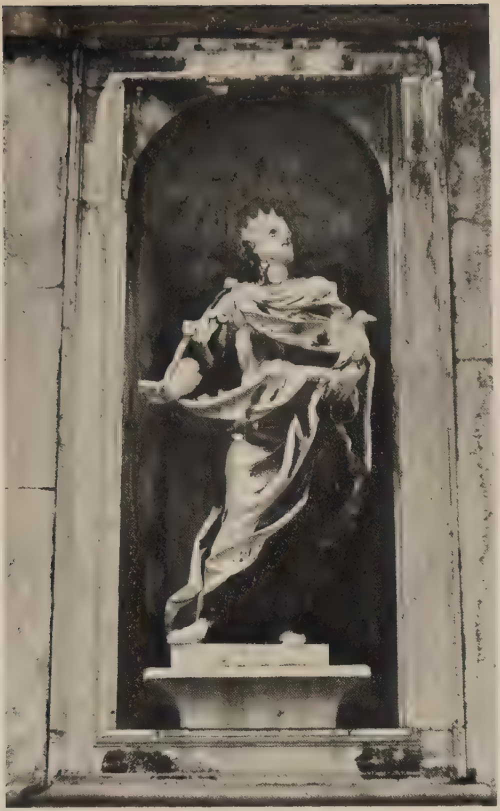
[4] P. Molmenti in *G. B. Tiepolo* (Milan, 1909), pp. 109 f., says that the painting was in bad condition. In the French translation (Paris, 1911), p. 93, the words 'ses couleurs sont presque effacées' are added. Cf. E. Sack, *Giambattista und Domenico Tiepolo* (Hamburg, 1910), p. 176: 'Das Bild ist stark nachgedunkelt.'

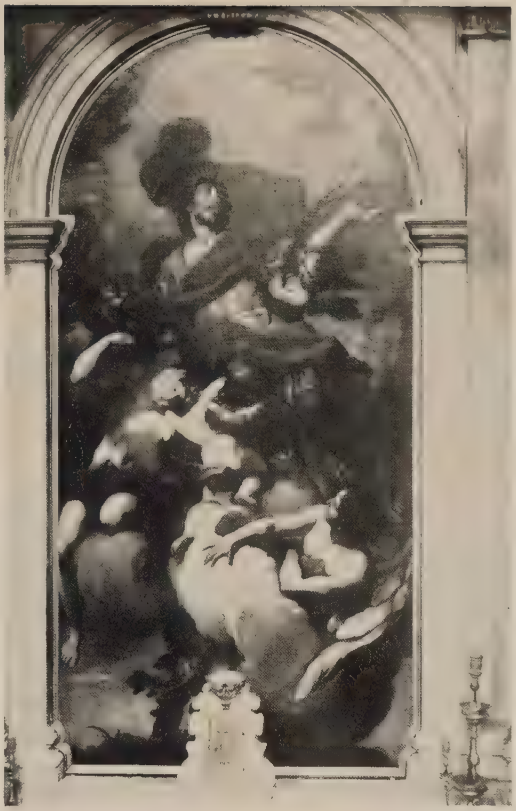
[5] Sack, *op. cit.*, pp. 78 f. and fig. 62*a*. The whereabouts of this picture cannot now be traced.

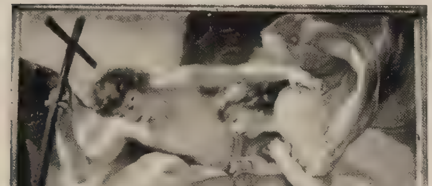
[6] G. Rossetti, *Descrizione delle pitture, sculture ed architetture di Padova* (Padua, 1780), pp. 242 f. ('S. Massimo in atto di orare sopra il Re S. Osvaldo'); P. Brandolese, *Pitture, Sculture, Architetture ed altre cose notabili di Padova* (Padua, 1795), pp. 232 f.; G. Moschini, *Guida per la città di Padova* (Venice, 1817), p. 149. Molmenti, *op. cit.*, p. 108, makes the odd suggestion that the bishop is the Scottish St. Marnan, who is said to have been the teacher of St. Oswald. Cf. D. Chambers, *De Scotorum fortitudine, doctrina et pietate* (Paris, 1631), p. 109. Alternatively, St. Augustine of Canterbury 'apostolo di Bretagna, onde poi per mezzo benedettini agostiniani si sparse fra noi il culto di S. Osvaldo'. We shall find that this hypothesis has no foundation.

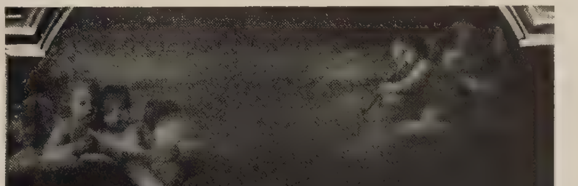
[7] National Gallery No. 1192. Sack, *op. cit.*, p. 224, fig. 216. Described in the 1929 Catalogue as 'Henry IV of Germany at Canossa', and in that of 1889 as 'A bishop, perhaps St. Ambrose'. It now bears the correct title, though St. Oswald is qualified by a question-mark.

[8] A. Morassi, *La Galleria dell' Accademia Carrara in Bergamo* (Rome, 1934), pp. 23 f.; G. Frizzoni, *La Galleria dell' Accademia Carrara in Bergamo* (Bergamo, 1907), pl. 106; Sack, *op. cit.*, p. 166, fig. 155. The theory of C. Caversazzi in *Emporium*, ix (1899), p. 209, seeking to identify the sketch at Bergamo with St. Proculus visiting St. Fermo and St. Rusticus is, of course, inadmissible.

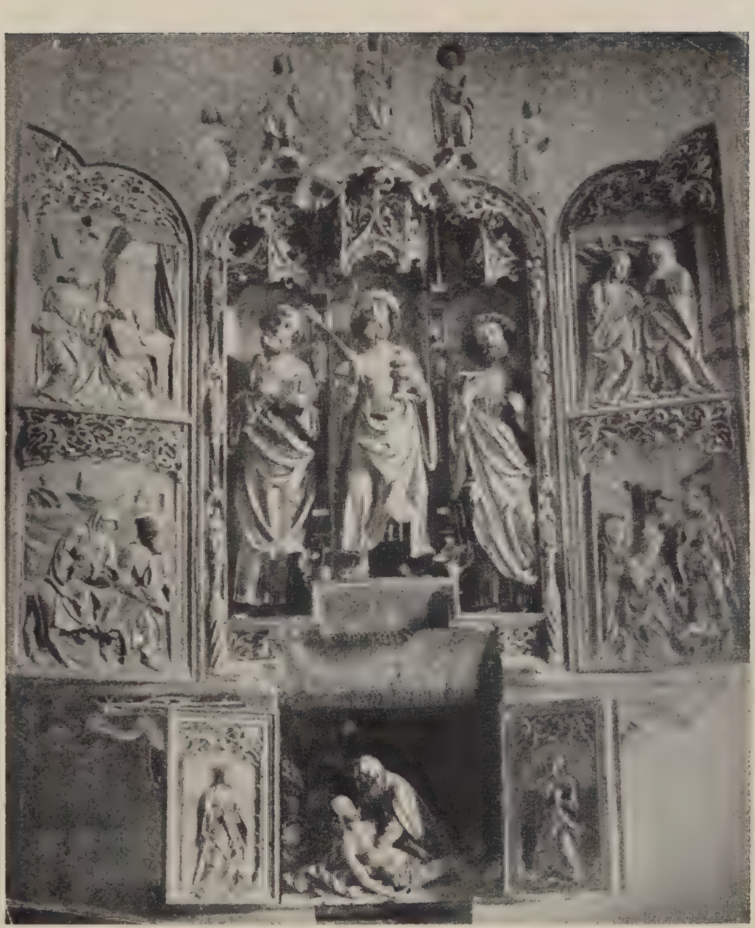

a. Statue on façade. S. Stae, Venice


b. A. Balestra. Glorification of St. Oswald. S. Stae, Venice

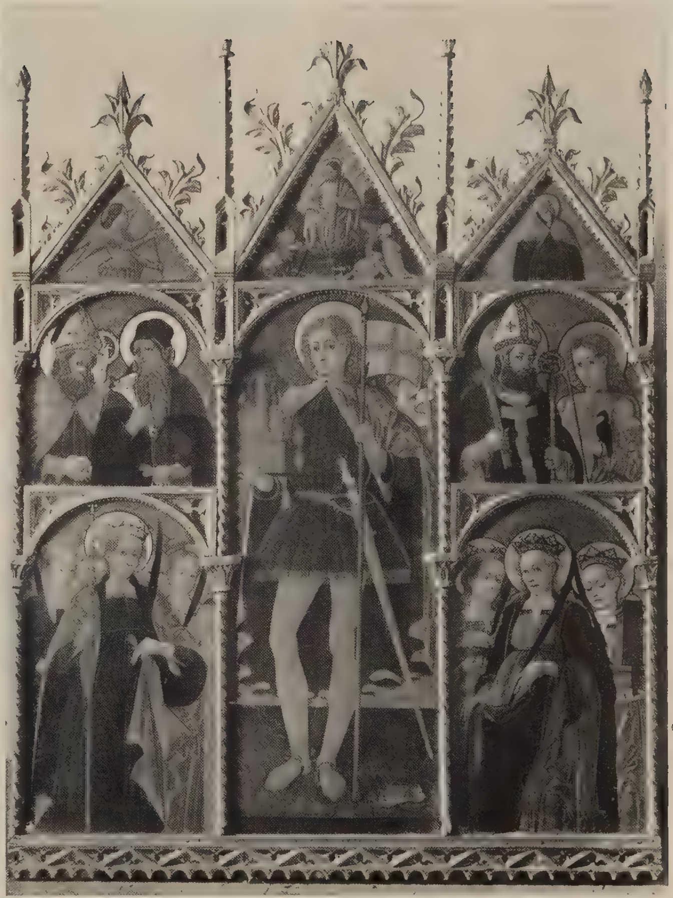

c. C. Unterbergher. St. Oswald kneeling before the Cross. S. Osvaldo, Rovereto


d. G. Franceschini. SS. Cecilia, Lucy, Margaret, and Oswald. S. Maria Incoronata, Bologna

Published by the Society of Antiquaries of London, 1951



a. M. Barth. Wooden triptych. S. Osvaldo, Sauris



b. A. Belunello. St. Florian and Saints. S. Floriano, Forni di Sopra

Published by the Society of Antiquaries of London, 1951

He is partly armed, his neck is surrounded by a ruff, and the gesture is less dramatic.

At Treviso St. Oswald was venerated in the church of S. Leonardo. Here he is said to be seen (though there is nothing to identify him to the naked eye from the floor of the church) among the saints who assist in the Glorification of St. Leonard on the ceiling, a characteristic work of G. B. Canal, a Venetian painter, who flourished at the end of the eighteenth century.[1] Moreover, in the sacristy is a picture of the Madonna and Child with St. Antony of Padua and St. Oswald, attributed to the school of Ruschi.[2] This picture was originally placed above the first altar on the north side of the nave,[3] but a painting of St. Antony appears to have been substituted for it in 1839.[4] Evidently by this date the popularity of St. Oswald was on the wane, and his cult was superseded by the more powerfully attractive St. Antony. In the sacristy is also preserved an eighteenth-century silver triangular pax, embossed with a figure of St. Oswald on his throne (pl. XXXV, *d*).[5] It used to be offered to the faithful to kiss on St. Oswald's day.

In the church of Merlengo, about four miles north-west of Treviso, is a remarkable picture by Domenico Tiepolo, signed and dated 1750 (pl. XXXI, *c*).[6] St. Oswald in a scarlet cloak, identified by the bird in the bottom corner, is pleading with outstretched hands to the Holy Family on behalf of a little boy in a white suit and yellow jacket, who reclines with his eyes closed against a stone step. The child's leg is bare, and the limp, distorted attitude suggests a fracture. Unfortunately we do not know the name of the boy, nor the story of the accident, which must have occasioned the painting of this brilliant picture, and we can only surmise that he was a member of the Cornaro family, who were at that time the owners of the large villa a few yards from the church. Here the elder Tiepolo had been employed a little earlier on some frescoes, which survive in a very damaged condition.[7] We may notice that both the Tiepolos delineated St. Oswald as a youth.

At Vicenza nothing tangible is left to remind us of St. Oswald, but from a *Vita* published early in the eighteenth century we learn that the cult was at that period very much alive.[8] We are told that there was an altar in the Franciscan church of S. Maria degli Angeli (destroyed in the course of the nineteenth century), and that many people from the surrounding district resorted there, finding grace in time of need, especially serious illness. In March 1712 a *Sacra Unione di Collegati* was founded in honour of the saint, and its members attended the daily mass at his altar. There was one mass for every 500 members, and a subscription of one solido a week for the support of the priests and the ornaments of the altar. By the end of March more than 1,200 people of all classes of the community had joined, and many from

---

[1] L. Coletti, *Catalogo delle cose d'arte e di antichità d'Italia. Treviso* (Rome, 1935), pp. 298 ff., fig. 285.

[2] *Ibid.*, p. 300. When I was in Treviso this picture had been removed for repair, and was scarcely distinguishable in a very bad light on the staircase of the priest's house. There is reason to believe that pictures and statues of St. Oswald exist in some of the churches in the province of Treviso.

[3] A. Rigamonti, *Descrizione delle pitture più celebri che si vedero esposte nelle Chiese ed altri Luoghi Pubblichi di Trevigi* (Treviso, 1776), p. 26. The 'altar di Sant' Osgualdo' is mentioned.

[4] A. Santalena, *Guida di Treviso* (Treviso, 1894), p. 177. There designated 'l'altare di S. Antonio'. We may note that St. Antony was also invoked against the plague. B. Kleinschmidt, *Antonius von Padua in Leben und Kunst, Kult und Volkstum* (Düsseldorf, 1931), pp. 366 ff.

[5] This is not recorded by Coletti. I owe the photograph to the generosity of the Director of the Istituti di Coltura, Treviso.

[6] Sack, *op. cit.*, p. 305; L. Crico, *Lettere sulle belle arti trevigiane* (Treviso, 1837), p. 126; R. Pallucchini, *Cinque Secoli di Pitture Venete* (Venice, 1945), pp. 142 f., fig. 66.

[7] Sack, *op. cit.*, pp. 74, 80, 99. The frescoes are extolled in a poem written probably about 1750. S. Bettinelli, *Opere*, xvii (Venice, 1800), p. 231. Molmenti, *op. cit.*, p. 118, suggests that these paintings were commissioned to celebrate the marriage of Andrea Cornaro in 1751. Evidently the family were patrons of both artists.

[8] S. Pace, *Vita di S. Osvaldo re di Nortumbria, dedicata al merito dell' illustrissima suor Regina Ghesina abbadessa, suor Verginia Cividale Vicaria e di tutte l'altre Monache del Monasterio d'Araceli di Vicenza* (Bassano, 1712), pp. 49 ff.

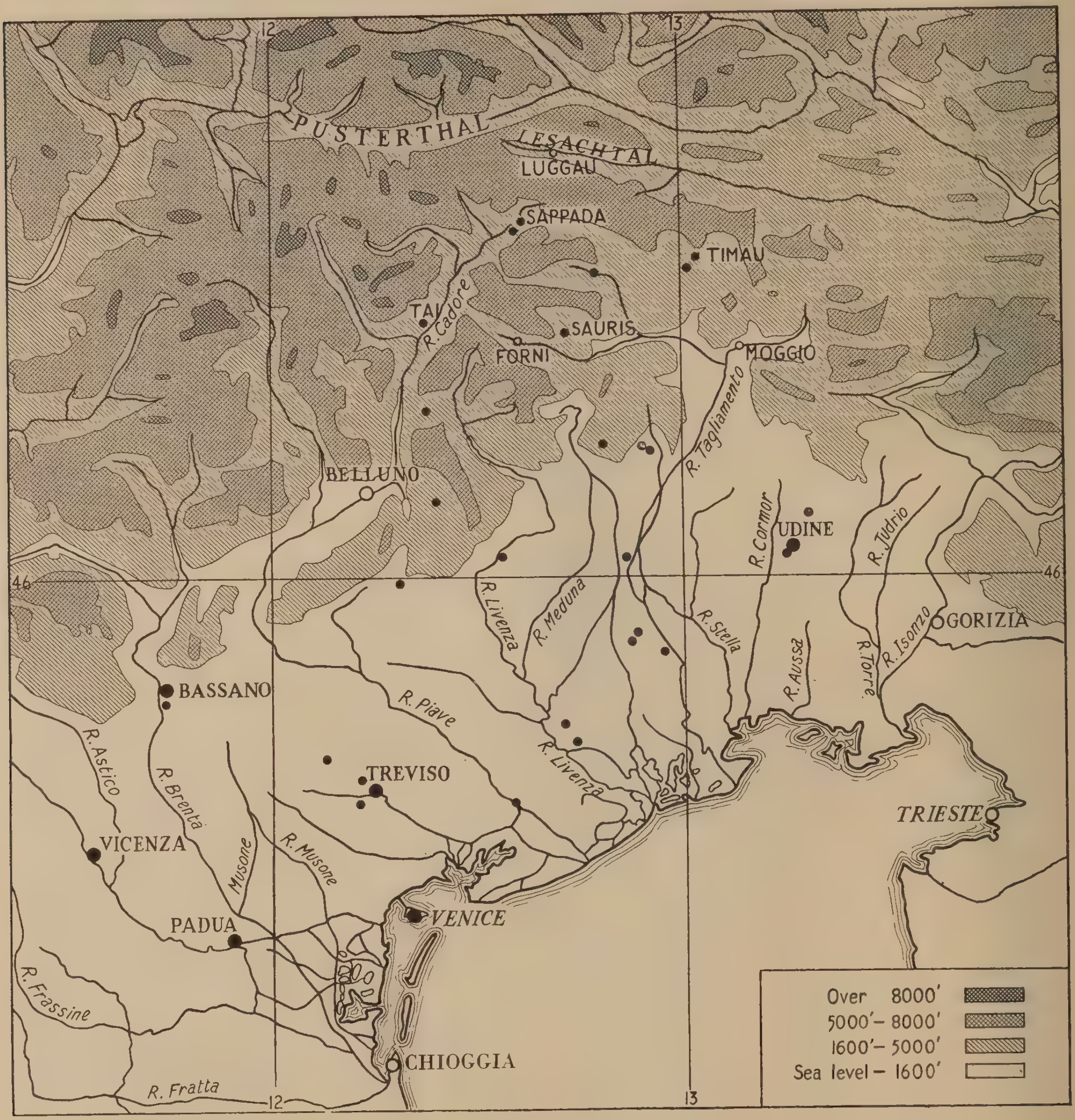

12
13
PUSTERTHAL
LESACHTAL
LUGGAU
SAPPADA
TIMAU
TAI
R. Cadore
SAURIS
FORNI
MOGGIO
R. Tagliamento
BELLUNO
R. Cormor
UDINE
R. Judrio
46
R. Livenza
R. Meduna
R. Stella
R. Aussa
R. Torre
R. Isonzo
GORIZIA
BASSANO
R. Astico
R. Brenta
R. Piave
R. Livenza
TREVISO
TRIESTE
VICENZA
Musone
R. Musone
VENICE
PADUA
R. Frassine
CHIOGGIA
R. Fratta
Over 8000'
5000'– 8000'
1600'– 5000'
Sea level – 1600'

FIG. 2. North-east Italy.

other cities such as Treviso and even Bologna. After five months there were more than 2,000 members, which meant (we are told) that twenty-eight masses were said every week, amounting to 1,456 in the year. Clement XI had granted a plenary indulgence on the day of admission, on the day of death, and on the first Sunday of March for all who visited the chapel of St. Oswald on that day. How long this burst of devotion was sustained I do not know. It has probably long disappeared, and I am told that there are no churches dedicated to St. Oswald in the province of Vicenza.[1]

The claim that the renown of St. Oswald had spread from Vicenza as far as Bologna is confirmed by a picture which survives in the obscure church of S. Maria Incoronata (pl. XXXII, *d*).[2] The work of a local artist, Giacomo Franceschini, it must have been painted in the period, when the confraternity at Vicenza was flourishing.[3] At first sight it appears to be a group of four virgin martyrs, a not unusual group of attendants upon the Madonna,[4] in this case upon S. Maria Incoronata, who is honoured at the adjacent high altar. That this may have been the intention of the artist is further suggested by an inscription let into the top of the frame—'*Speciosae inter Virgines Jerusalem*'. We are tempted to conjecture that the patron, who paid for the work, made the incongruous demand that the king of Northumbria, a peculiar favourite of his own, should be included as a companion to SS. Cecilia, Lucy, and Margaret. The artist has therefore ingeniously transformed his fourth virgin (St. Agatha or St. Barbara?) into St. Oswald by investing her with a crown and corslet and placing a raven at her side.

A suburb in the outskirts of Udine is known as S. Osvaldo.[5] The church, containing a statue of the saint, is an early nineteenth-century building, but is said to have been founded in 1706. The saint was also venerated in the church of S. Valentino in Udine, but the picture recorded there in the eighteenth century cannot be found to-day.[6]

A number of secluded churches in the country districts of Friuli are dedicated to our saint, and several small hamlets still bear the name of S. Osvaldo.[7] Unfortunately, lack of published material has made it impossible to trace their history, but such evidence as there is, besides the data elsewhere we have already reviewed, suggests that they may be all comparatively late and may reflect an interest, which arose with almost startling rapidity in the seventeenth and eighteenth centuries. In passing to inquire the origin of the cult and the reasons for St. Oswald's popularity in the Veneto we can scarcely be mistaken if we trace it to a source in the remote little village of Sauris, highly difficult of access in the Carnian Alps (figs. 2 and 3).

---

[1] A panegyric published at Vicenza in 1857 suggests that St. Oswald may have been remembered here in the middle of the nineteenth century. A. Schiavo, *Di S. Osvaldo M. re della Nortumbria et Bretwalda degli Angli. Orazione Panegirica dedicata al nobilissimo e reverendissimo monsignore Bartolommeo Conte Miari novello canonico della Cattedrale di Belluno* (Vicenza, 1857), p. 8. His feast was kept with some solemnity at Belluno. We shall consider Bassano at a later stage.

[2] The church is now immured in a modern building, and serves as the chapel of a sisterhood. Until 1798 this church belonged to the Austin friars.

[3] C. Malvasia, *Le pitture di Bologna* (Bologna, 1732), p. 80. In the first edition of this book (1706), p. 83, there is no reference to the picture. Our saint is described as 'S. Usualdo Re', a spelling which has been retained ever since. Cf. *Le chiese di Bologna illustrate* (Bologna, 1927), p. 100. I am grateful for the good offices of Professor Luigi Montanari in arranging for the photograph to be taken and in making vain endeavours to throw any light upon the origin of the picture. The measurements of the painting are 3·20 × 1·84 metres. There is no other evidence in Bologna of any interest in St. Oswald.

[4] G. McN. Rushforth, *Medieval Christian Imagery* (1936), p. 263.

[5] Further evidence of the cult near Udine may be found in G. D. Marzuttini, *Sermone al popolo in onore di S. Osvaldo re e martire recitato il di 5 agosto nella chiesetta campestre nob. famiglia Caimo-Dragone* (Udine, 1827), p. 14. The chapel dedicated to St. Oswald, in which this sermon was preached, cannot be identified. The preacher admits that St. Oswald was suffering neglect, and the sermon was designed to resuscitate fervour. He makes the curious remark that the custom of saying mass in St. Oswald's honour on this day is 'a noi pervenuto dall' isola di Wigth [*sic*] unita all' Inghilterra preservata ad intercessione del nostro Santo da una subita pestilenza'. This confirms what we have found elsewhere, that St. Oswald was invoked in time of pestilence.

[6] Stua, *infra*, p. 77; Marzuttini, *op. cit.*, p. 14. It may be noted also that the church of S. Valentino at Udine was at one time resorted to in time of pestilence. *San Valentino. Frammenti Storici* (Udine, 1923), pp. 18 ff.

[7] Appendix I.

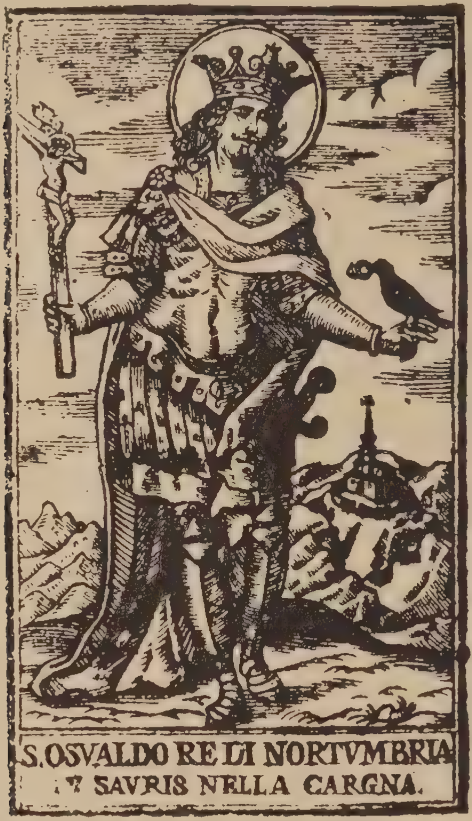


Fig. 3. Seventeenth-century Woodcut.

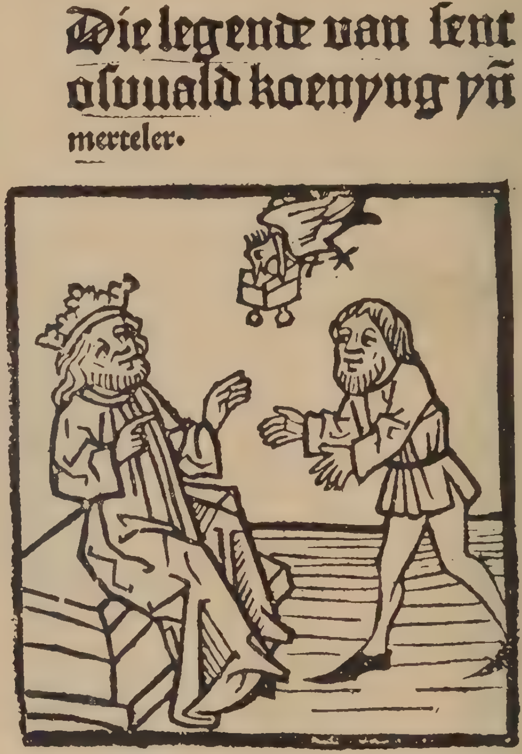

Die legende van ſent oſuuald koenyng vñ merteler.

Fig. 4. Fifteenth-century Woodcut (German).

The first account to be given of the cult of St. Oswald at Sauris is found in a small volume by P. C. Soardo published at Udine in 1667,[1] and dedicated to Alvise Foscari, the Venetian Governor of Friuli, because, as he says, the virtues embodied in St. Oswald have been reproduced in the House of Foscari.[2] The life of the saint is based on Bede, with the assistance of a book published at Frankfurt,[3] from which he derives the German legend of the raven, the bearer of chrism from heaven for St. Oswald's coronation. This, he says, explains the old pictures and statues, which show the saint accompanied by a raven with a vase between its claws. Stefano Pace, the author of the book published at Vicenza, merely reproduces what he has found in Soardo, but at this point he adds that he has in his possession a coin struck in the Swiss Canton of Zug, where St. Oswald is shown with his raven, a coin which is worthy of being worn as a medal round the neck.[1] Soardo ends his story of the saint as follows:

---

[1] P. C. Soardo, *Vita di S. Osvaldo Re di Northumbria, specchio e esempio de' Principi e Soldati Christiani: corrota del Venerabile Beda e di altri approvati Autori* (Udine, 1667). This book, together with the woodcut frontispiece, is largely reproduced in the work by Pace already mentioned. A second edition was published at Udine and Bassano in 1689.

[2] His brother died fighting the Turks in 1657. P. Litta, *Celebri Famiglie Italiane*, iii (Milan, n.d.), s.v. 'Foscari'.

[3] Probably some edition of the Legenda Aurea, such as *Dat duytsche passional* (Cologne, 1485), p. ccxxii and woodcut (fig. 4).

> His fame went abroad . . . while in Carnia in a place called Sauris in the mountains is an ancient church dedicated to St. Oswald, where they preserve and venerate one of his thumbs. Although the way is long and wearisome there is always a great crowd of people, not only of the ordinary, common people, but of the most conspicuous nobility, citizens of importance and personages of great authority, who, making no account of the great discomfort of the journey, go in person to visit the church and to venerate this holy relic, and to obtain most singular and gracious favours, besides the indulgences, which are given in honour of the saint. And not only do they go from Friuli, but from the famous city of Venice, from Padua, from Treviso, and from other most remote places, and in particular from Germany.[2]

We have here clear evidence that in the middle of the seventeenth century Sauris had acquired fame as a resort for pilgrims, who carried back to their homes in the various cities of the Veneto the renown and the cult of the king of Northumbria. But, how, we may ask, did a relic of St. Oswald ever arrive at a place so remote as Sauris or his story become known there? The old writers are hard put to it to find an explanation. Fontanini, writing in 1726,[3] is inclined to connect the thumb at Sauris with one of the relics sent by Patriarch Paulinus of Aquileia to Angilbert and by him to the monastery of Centula in the eighth century,[4] and there is another tradition that the relic had been brought to Sauris in the remote past by a German huntsman. The history of Sauris was first narrated by Stua, a writer with some pretension to scholarship, who published yet another *Vita* in 1769, where we find an alternative theory.[5] According to age-long tradition the relic was brought by a native of Carnia, who served in St. Oswald's army. Braving the wrath of the ferocious Penda he seized his opportunity after the battle of Maserfeld and made off with one of the martyred king's thumbs. Stua supports this theory as a highly probable hypothesis, though he admits it cannot be substantiated by documents. At the end of his volume, however, he prints a series of records (since destroyed by fire) relating to the history of the church at Sauris, and with them we stand on firmer ground.

The earliest of these, dated 1328, is an indulgence granted to those who visit on certain days the churches of St. Oswald and St. Laurence at Sauris. In 1470 a church and an altar in honour of the Blessed Virgin Mary and St. Oswald were consecrated. In 1515 another indulgence was granted, by which we learn that miracles were wrought by St. Oswald among the sick, who had recourse to him. In 1544 permission was given for rebuilding the church on a larger scale, and in 1551 there was a consecration of the church and two altars. In 1649 a confraternity was founded in honour of the saint, and in 1671 a plenary indulgence was granted to all who visited the church on the patronal festival. Stua testifies to the popularity of the cult in his own day, the annual procession on 5th August, and the panegyric. Votive tablets on the walls of the church recorded the favours dispensed to pilgrims from afar, from Venice, Vicenza, Padua, and Treviso—cities, be it noted, where we have already found evidence of the cult of St. Oswald at this period. His latest document is a letter of 1750 from Carlo Camuccio, bishop of Capo d'Istria and archdeacon of Tolmezzo, addressed to Benedict XIV, asking for a plenary indulgence in view of the great popularity of the cult at Sauris.

---

[1] *Archaeologia*, xciii (1949), p. 119, pl. XXVI.

[2] *Op. cit.*, p. 89.

[3] G. Fontanini, *Di Santa Colomba Vergine sacra della città d'Aquileja* (Rome, 1726), p. 48.

[4] The relic of one 'Osqualdi'. We cannot rule out the possibility that our St. Oswald is intended, as relics may have been circulating in south Germany at this early date. Hariulf, *Chronique de l'abbaye de Saint-Riquier* (ed. F. Lot) (Paris, 1894), p. 66. This theory is repeated by N. Grassi in *Notizie storiche della provincia della Carnia* (Udine, 1782), p. 170, who also testifies to the numerous pilgrims and the miracles wrought by the prayers of the saint.

[5] G. P. della Stua, *Vita di S. Osvaldo Re di Northumberland e Martire colla storia del suo culto* (Udine, 1769), p. 60. Stua, an ecclesiastic of Udine, was the author of several books on local saints. F. di Manzano, *Annali del Friuli*, vi (Udine, 1868), p. 478. He is too sophisticated to accept the German legend (propounded quite correctly by Soardo) as the source of the raven and the ring. ('Gli scrittori di secoli bassi volendo spiegarne il significato hanno spacciato vane fanfalucche', *op. cit.*, p. 29). He prefers a subtlety of his own, whereby the raven is really a dove, with allusion to St. Oswald's vision of St. Columba, and the ring a hieroglyph.

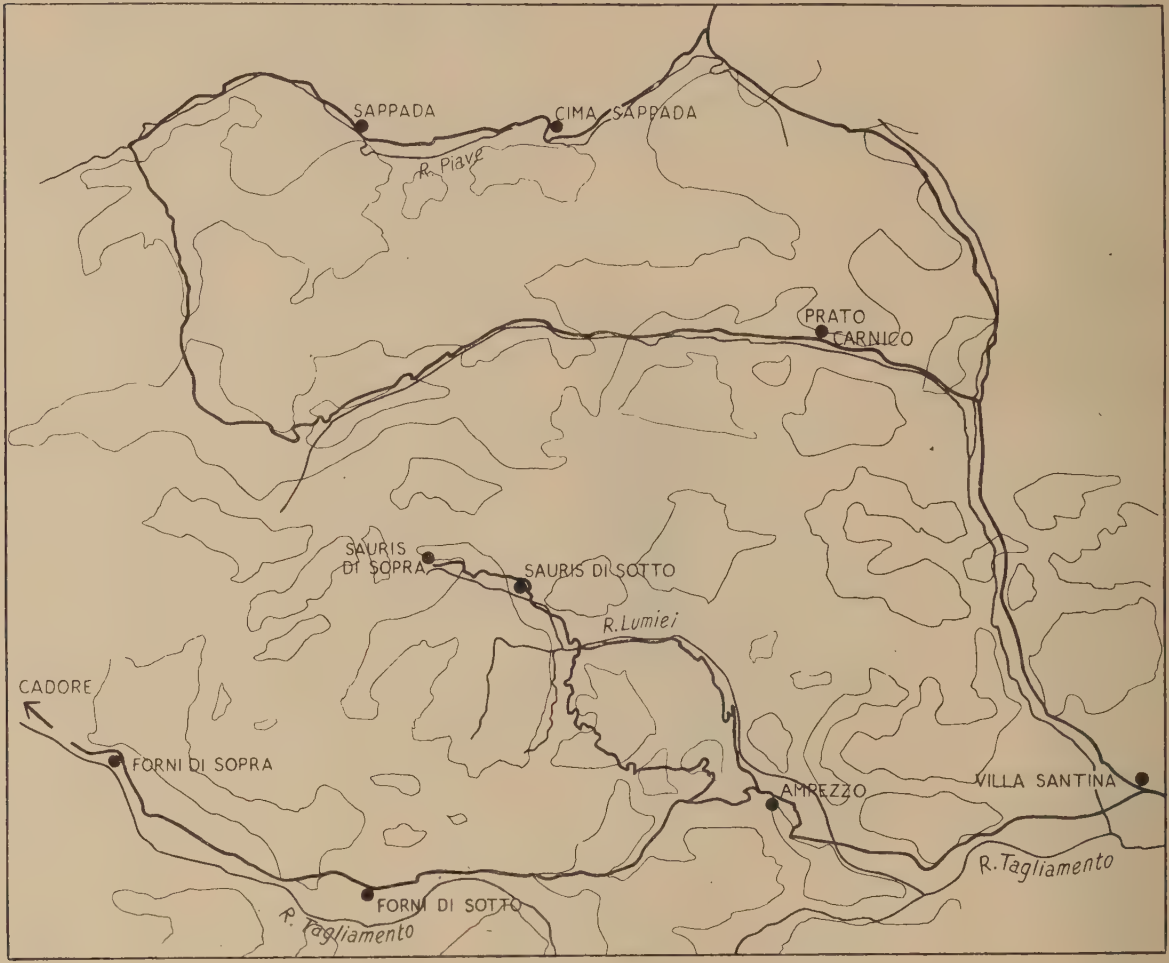


FIG. 5. The environs of Sauris.

Since the time of Stua further research has been made into the origins of Sauris.[1] A settlement in this sequestered valley is first mentioned in 1280,[2] but owing to the lack of records a more useful approach has been found through a study of the German dialect, which is still spoken there. In this region of the eastern Alps three isolated villages are bilingual.[3] The origin of Timau has been attributed to an influx of Germans in the middle ages, who were brought in by the Venetians for mining the deposits of gold, silver, and lead. The people of Sappada are said to have taken refuge there in the twelfth or thirteenth century from the Pusterthal, where they had been harried by the counts of Gorizia. No reason is known for the immigration into Sauris, but linguistic affinities connect the dialect with the valley of the Lesach on the northern watershed of the Alps, and in particular with the communities at St. Lorenzen[4] and at Luggau, near the ancient boundary between the Tyrol and Carinthia. It is possible that the relic was brought by the original immigrants in the early part of the thirteenth century.[5]

It is clear that the cult of St. Oswald was firmly established at Sauris and in the district generally two centuries later. In the church of St. Florian at Forni di sopra in the valley of the Tagliamento above Ampezzo there is an altar-piece signed and dated 1480 by Andrea Bellunello, the founder of the local school of painting (pl. XXXIII, *b*).[6] On either side of a large figure of St. Florian in the centre panel are groups of saints in two tiers. A half-figure of St. Oswald in a pink tight-fitting jerkin appears in the upper right-hand corner, a serious looking youth with long hair and his raven attached to his left hand by a cord.[7] The cool tones and tenuous figures of Bellunello are overpowered by the coruscating baroque altar, which now enframes the picture, and the wealth of colour in the church is reinforced by the paintings in the apse above the altar, excuted by Gianfresco da Tolmezzo in 1500. Here once more St. Oswald can be seen.[8] He was evidently well known among the people of this region, who perhaps had become the better acquainted with him by visiting his sanctuary at Sauris. If we cross the mountain pass into the Cadore, we shall find yet another memorial of St. Oswald in an altar-piece by Cesare Vecellio, a cousin of Titian, in the church at Tai.[1] The picture has small claim to notice as a work of art. St. Candidus and St. Oswald, holding a sceptre, stand on either side of a Virgin and Child enthroned. At the bottom of the step is the raven with his ring perched on a golden vase.[2]

---

[1] A. Galanti, *I tedeschi sul versante meridionale dell' Alpi* (Rome, 1885), pp. 10 f. There is a large and controversial literature on these isolated blocks of German inhabitants south of the Alps.

[2] *Thesaurus Ecclesiae Aquilejensis* (Udine, 1817), p. 35.

[3] G. Lorenzoni, 'La toponomastica di Sauris oasi tedesco in Friuli', in *Ce Fastu?* (*Bolletino della Società filologica friulana*), xiii (Udine, 1937), pp. 95 ff.

[4] It may be noted that the church at Sauris di sopra is dedicated to St. Laurence. Besides the church of St. Laurence at Kartitsch, to which we refer below, there are also those at St. Lorenzen im Lesachtal, and St. Lorenzen im Gitschtal. K. Ginhart (ed.), *Die Kunstdenkmäler Kärntens*, ii (Klagenfurt, 1930), pp. 203, 244.

[5] I am told that a picture of St. Oswald (with a double cup in his hand) appearing to a seventeenth-century parish priest of Sauris is now at Luggau. It is illustrated in *Sauris nelle Nozze d'Oro di D. Antonio Trojero rievoca la sua storia ed i suoi sacerdoti* (Udine, 1932), p. 18. An older writer speaks of an annual pilgrimage from Sauris to Heiligenblut in Carinthia, with the suggestion that the original inhabitants may have come from that region. L. Lucchini, *Saggio di dialettologica Sauriana* (Udine, 1882), p. 13.

[6] Bellunello settled and worked at S. Vito in Friuli. J. A. Crowe and G. B. Cavalcaselle, *A History of Painting in North Italy*, iii (ed. Borenius, 1912), pp. 66 f.; R. Marini, *La Scuola di Tolmezzo* (Padua, 1942), p. 18.

[7] His name can be faintly traced above the halo. But who is the companion figure of the bishop with the axe? Previous suggestions of St. Dunstan (*Opere d'arte in Friuli* (Udine, 1894), p. 29), and St. Wilfrid (G. Marinelli, *Guida della Carnia e del Canal del Ferro* (Tolmezzo, 1924–5), p. 686) are obviously no more than bad guesses. He is possibly intended for St. Erhard of Regensburg, who is not uncommonly met in these Alpine regions with an axe, but unfortunately this suggestion does not account for the letters inscribed behind him—S. B [or D] . . . U L F. To toy with a possible allusion to St. Erhard's brother, St. Hildulf of Trier, would lead to further unprofitable guessing. Incidentally, why does St. Erhard carry an axe? The books of reference are silent. The attribute has been associated with his zeal in building churches, and he is said to be a patron of carpenters. My only authority for this is H. Mang, *Unsere Kirchenpatrone* (Brixen, 1942), p. 15.

[8] R. Marini, *op. cit.*, p. 62. Unfortunately I did not notice this figure when I was at Forni.

A wooden triptych of this period is preserved at Sauris itself above the high altar, where the central compartment contains three figures in the round of St. Peter, St. Paul, and St. Oswald between them, carrying a sceptre and a double cup (pl. XXXIII, *a*).[3] It is an elaborately and skilfully executed work, dated at the back 1525, and is the earliest of a group of triptychs from the same workshop in the villages of neighbouring valleys. (There is another, dated 1551, in the church of Sauris di sopra.) A contract still exists for the altar-piece at Prato Carnico by Michael Barth from Bruneck in the Pusterthal, who is known to have been a pupil and a successor of the famous Michael Pacher.[4] This attribution is of some importance in showing that by the sixteenth century Sauris still retained its connexion with the districts to the north, in the Tyrol and Carinthia, whence the people had originally come. Possibly at that period there were more German than Italian pilgrims to the sanctuary at Sauris until a little later when the tide turned and swelled with an influx from the cities of the Veneto. For reasons that are still obscure the fame of St. Oswald as a healer spread southwards, and by the seventeenth and eighteenth centuries Sauris became a fashionable pilgrimage resort in time of plague.[5] Possibly the keen mountain air and the physical exercise incurred by pilgrims to this remote shrine made some contribution to the cures which were wrought there. This movement lasted into the middle of the nineteenth century, when the stream of visitors gradually dried up, and the sanctuary relapsed to its earlier status as a shrine for the inhabitants of the Carnian mountains. The memory of St. Oswald lingered on for a while, as we have seen, in places like Venice and Treviso, but once the pilgrimage had subsided it was only a matter of time when his cult would be supplanted by those of saints with weightier credentials or a more universal fame than a remote king of Northumbria could command. One reason given for the decay of the pilgrimage was the lack of spiritual provision at Sauris. Despite the popularity of the cult it is astonishing to find that only the parish priest of the two churches, who persisted in living at Sauris di sopra until 1809, was available

---

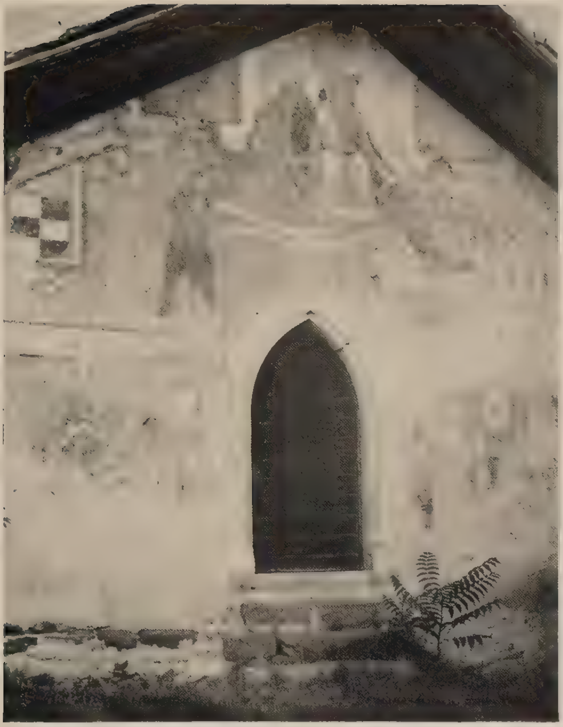
[1] The next village to Pieve, Titian's birthplace. An important road from Venice to the Brenner ran through the Cadore and the Pusterthal (where lay the monastery of S. Candido). O. Stolz, *Die Ausbreitung des Deutschtums in Südtirol im Lichte der Urkunden*, iv (Munich and Berlin, 1934), pp. 205 f. The interest in St. Oswald at Tai may therefore have arrived quite independently of Sauris. According to Stua, *op. cit.*, p. 61, the people of Tai at one time claimed to possess a relic of St. Oswald. I was told in the Biblioteca Civica, Belluno, that the history of the parish has never been written.

[2] J. A. Crowe and G. B. Cavalcaselle, *The Life and Times of Titian*, ii (1881), p. 493; A. Robertson, *Through the Dolomites* (1903), p. 84. No photograph is available of this picture, and the bibliography in Thieme-Becker, s.v. 'Vecellio', gives no account of it.

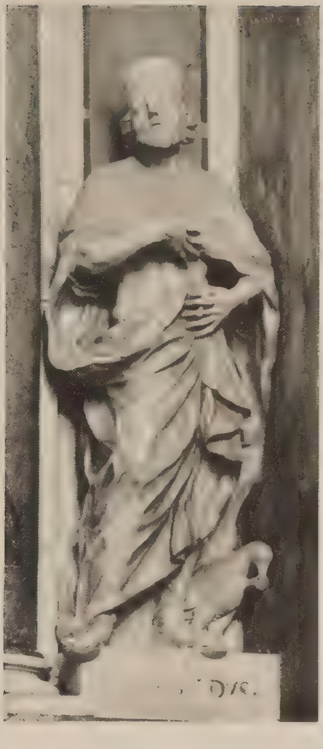
[3] G. Marchetti, 'Intagli tedeschi in Carnia', in *Ce Fastu?* xx (1942), pp. 12 ff., figs. 1–3.

[4] E. Hempel, *Michael Pacher* (Vienna, 1931), p. 84.

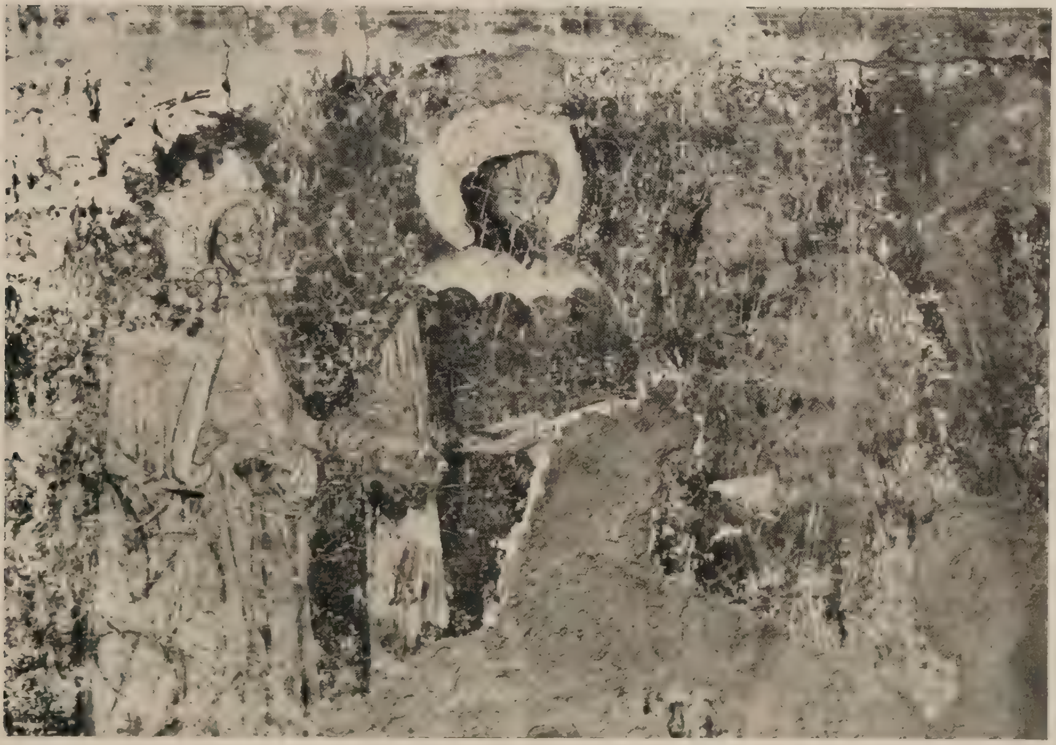
[5] The long period of peace and security enjoyed by Friuli under the Venetian imperium, extending from the war of the League of Cambrai (with the brief interval of the war of Gradisca in 1616) down to the fall of the Republic, must have favoured the extension of the cult southwards.



a. The Façade. S. Vigil unter Weineck, Bozen

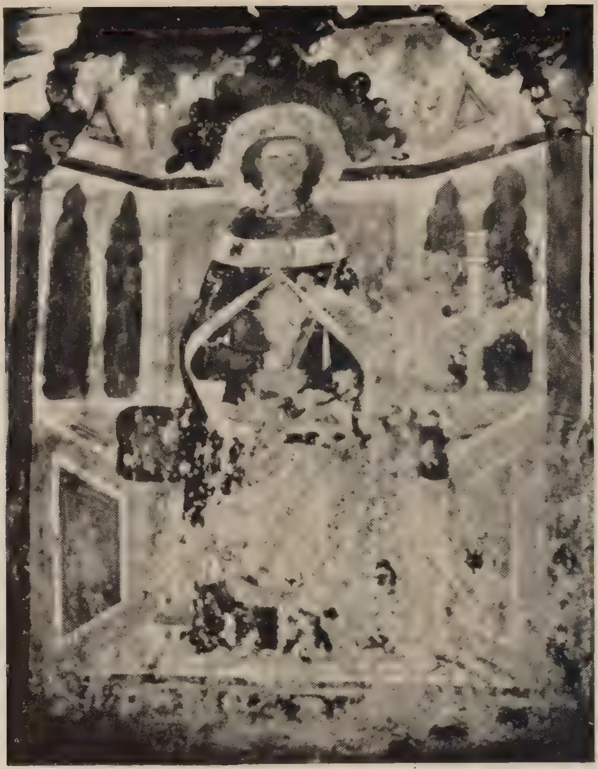


b. St. Oswald. The Cathedral, Brixen

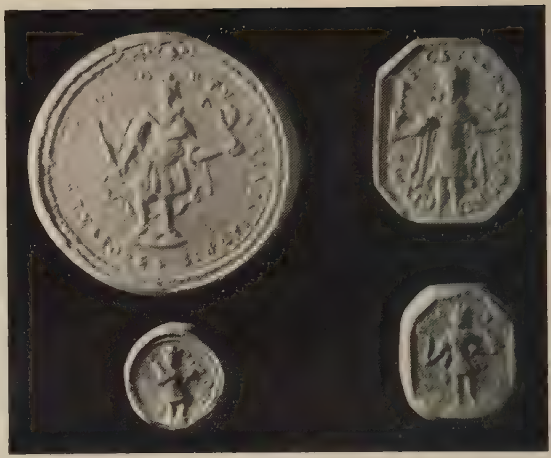


c. St. Oswald giving his wife to Christ. S. Vigil unter Weineck, Bozen

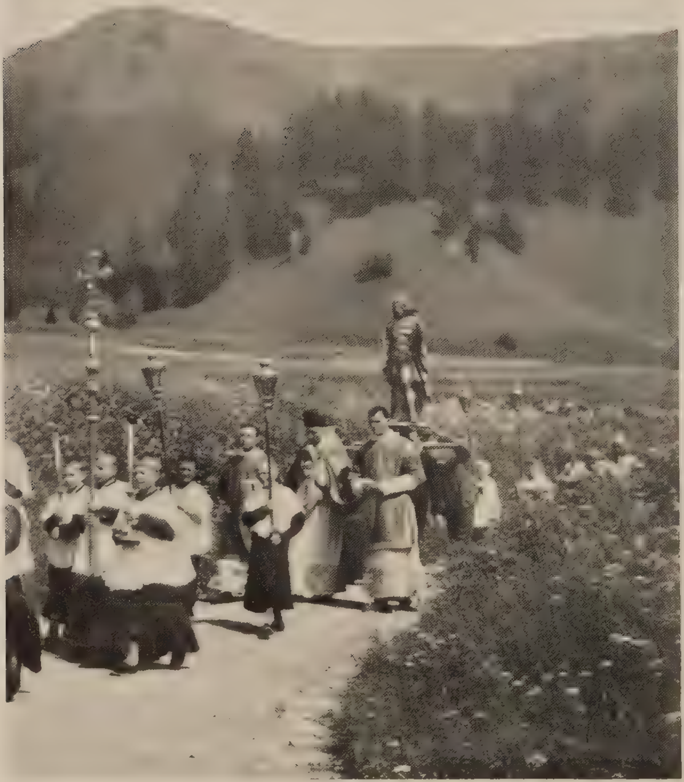
Published by the Society of Antiquaries of London, 1951



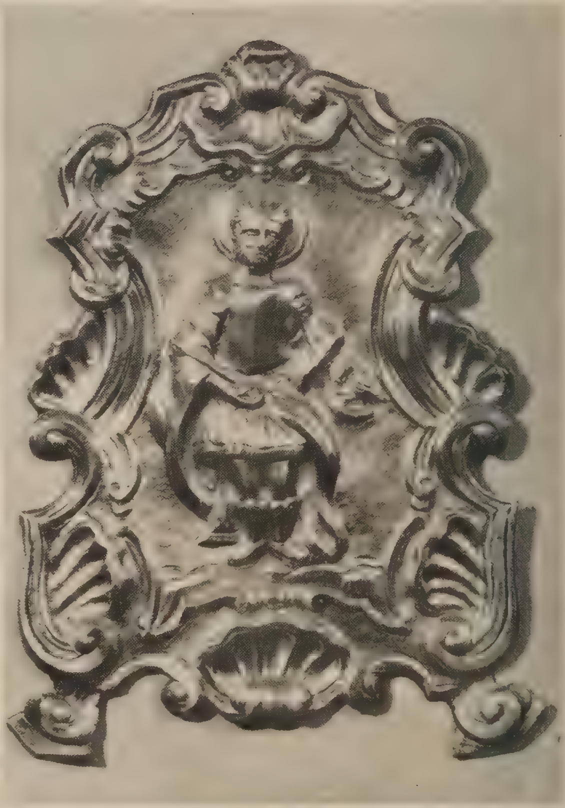
a. St. Oswald. S. Johann, Taufers (Münstertal)



b. Pilgrim's medals from Sauris ($\frac{1}{1}$)



c. Sauris. 5 August 1947



d. Silver Pax. S. Leonardo, Treviso

Published by the Society of Antiquaries of London, 1951

for visitors, many of whom returned home without receiving the sacraments.[1] It seems that the tradition was finally broken in the upheavals of 1848.

Sauris was so difficult of access that one is amazed that the pilgrimage should have survived so long in the face of the physical obstacles. We are told that the approach from whatever direction involved a walk of not less than five hours on a *cattivo sentiero mulattiero*,[2] and in particular by the track from Ampezzo in the Tagliamento valley, which twists and turns to the summit of the Col di Pura and then descends into the upper reaches of the river Lumiei, a distance in all of twenty-seven kilometres. In the last twenty years access has been improved by driving a rough, stony road through the cliffs walling in the precipitous defile by which the river escapes from its mountain basin[3] until at the end of several miles it emerges in sight of Sauris and its straggling wooden huts, with heavy overhanging eaves and balconies, and the bulbous spire of the church peering up behind them. The building is probably much as it was left in the sixteenth century with a veneer of baroque decoration added later, and there is little to suggest that the church was ever much frequented. On the walls hang a number of ex-votos old and new to testify to the favours of St. Oswald, and a couple of daubs to illustrate his famous act of charity to beggars.

August 5th is still kept with much devotion at Sauris, and with the aid of modern transport crowds still flock there for the *festa*. At mass a sermon is preached on the life of St. Oswald as a source of inspiration for the people of to-day, and the holy thumb, resembling the stump of a very fat pencil, is carried in a silver reliquary through the parish, preceded by the statue and banner of the saint borne aloft by the faithful (pl. xxxv, *c*).[4]

Let us now turn our attention to the other group of Oswald dedications on Italian soil, which are all to be found in the South Tyrol, and may be attributed, like those in Friuli, to German influences penetrating the Alpine barrier.[5] We cannot here discuss the descent of German settlers over the Brenner, beginning with the Bavarians in the sixth century and reaching its climax in the fourteenth, when the whole of the Tyrol to a point south of Bozen, including the Pusterthal and the Vintschgau and most of their tributary valleys had become predominantly German.[1] 'The land here is full of all good things, the wine is excellent and the other fruits full of sweetness', reported Felix Faber, when he travelled through at the end of the fifteenth century.[2] These lands of plenty were highly prized by the invaders from the north, and large estates were parcelled out among the monasteries and cathedral chapters of south Germany.

---

[1] L. Lucchini, *Memorie del Santuario di S. Osvaldo in Sauris Arcidiocesi di Udine* (Udine, 1880), p. 9. It is surprising that the church was not rebuilt on a more ambitious scale when the pilgrimage became fashionable farther afield. St. Oswald is thought to have first become popular as a protector against plague and contagious epidemics as early as 1348. *Ibid.*, p. 23. This is repeated in E. Fabbrovitch, *Un santo inglese venerato in Carnia* (Udine, 1932), p. 10, a compilation of little value.

[2] G. Marinelli in C. Lombroso, *Pensiero e Meteore* (Milan, 1878), p. 221. I am told that the episcopal visitations were made in a litter. In Carlo Camuccio's letter to Benedict XIV he speaks of Sauris as 'uno de' principali Santuari dello Stato Veneto', and says that 'devoti, che ogni anno in gran numero anche più di cento miglia lontani da Venezia, Padova, Vicenza, Treviso e da molte altre parti vengono a visitarlo e prosciogliere i loro voti, benchè per arrivarsi debbono necessariamente passare per più miglia di strada di qualche cavalcatura, non già di alcuna sorta di calessi'. In the Museo Civico at Udine there are specimens of medals formerly presented to the pilgrims at Sauris, casts of which have been generously given me by the Director (pl. xxxv, *b*). Cf. V. Ostermann, 'Numismatica friulana. Le Medaglie' in *Atti della Accademia di Udine*, 2nd ser., v (Udine, 1881), p. 129; F. Kuncze, *Systematik des Weihemünzen* (Raab, 1886), p. 529.

[3] The dam, 450 feet high, of the hydro-electric power station opened in this valley in 1948, is far below the level of the road.

[4] I owe the photograph to the kindness of the Rev. A. A. H. Radice, who made a point of visiting Sauris on the *festa*. The enthusiasm of Sauris for St. Oswald is shared with Guiseley in Yorkshire, where the *festa* is also celebrated with a procession and a panegyric. Here, however, it is a modern revival.

[5] The only other trace of interest in St. Oswald I have found in Italy is an account of his miracles in a collection of excerpts from the Fathers and other early writers (including Bede) in the Biblioteca Casanatese, Rome. The original home of this early tenth-century manuscript is thought to have been Benevento. E. A. Lowe, *Scriptura Beneventana* (Oxford, 1929), p. xxxviii. It is possible that the text may have come direct to southern Italy from Normandy, as it has been shown that the monastery of S. Wandrille was a connecting link of this kind. W.

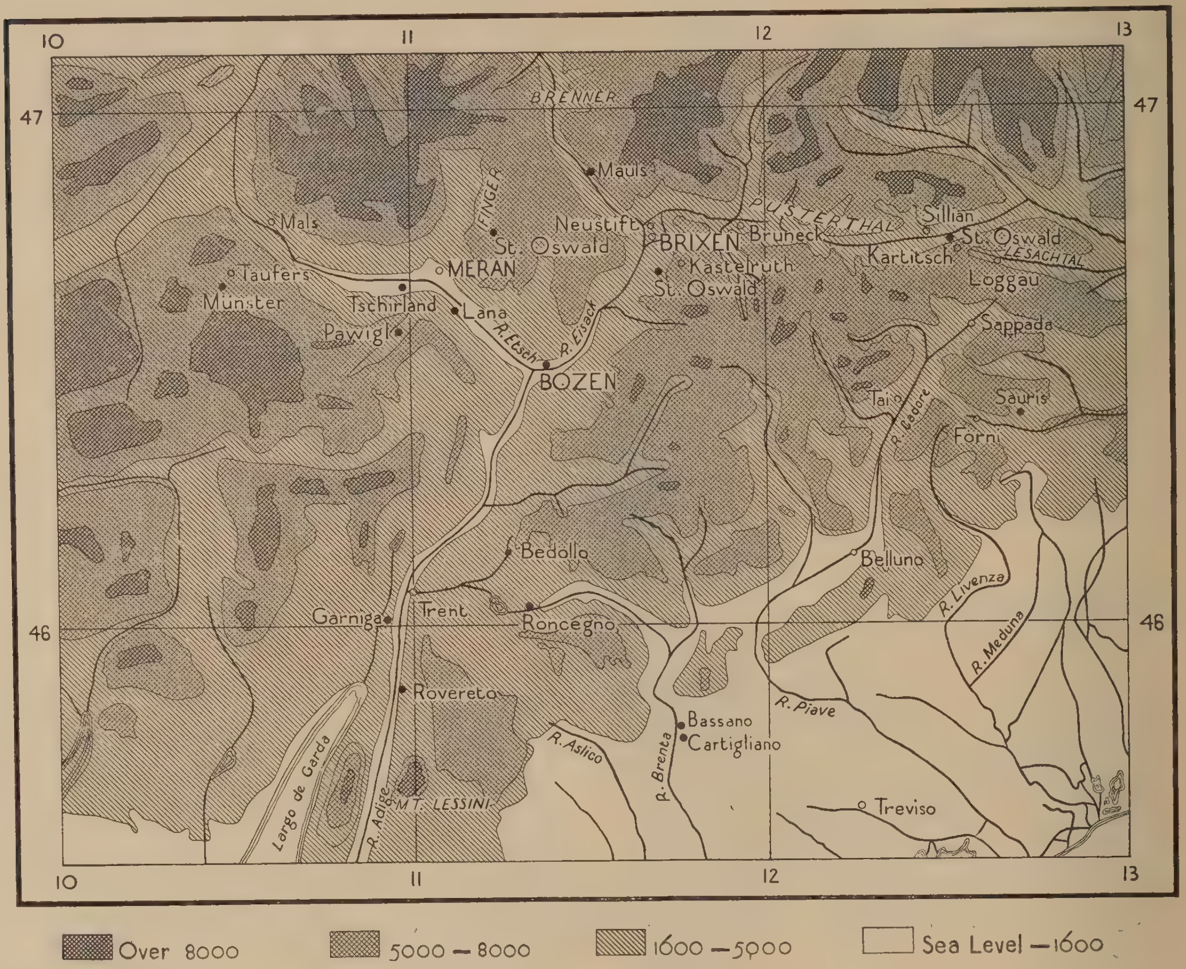

10
11
12
13
47
46
BRENNER
Mauls
FINGER
Mals
Neustift
St. Oswald
BRIXEN
Bruneck
PUSTERTHAL
Sillian
St. Oswald
Kartitsch
LESACHTAL
Taufers
MERAN
Kastelruth
St. Oswald
Loggau
Münster
Tschirland
Lana
Pawigl
R. Etsch
R. Eisack
Sappada
BOZEN
Tai
R. Cadore
Sauris
Forni
Bedollo
Belluno
R. Livenza
Garniga
Trent
Roncegno
R. Meduna
Rovereto
R. Piave
Bassano
Cartigliano
R. Astico
R. Brenta
Largo de Garda
R. Adige
MT. LESSINI
Treviso
Over 8000
5000 – 8000
1600 – 5000
Sea Level – 1600

FIG. 6. The South Tyrol.

Levison in *Zeitschrift für celtische Philologie*, xx (1936), pp. 382 ff. Bede's *Historia Ecclesiastica* was well known to the writers of this monastery. A. Rosenkranz, *Beiträge zur Kenntnis der Gesta abbatum Fontanellensium* (Bonn, 1911), pp. 74 ff.; *Revue Bénédictine*, xlvi (1934), pp. 241 ff.

[1] A short and convenient account may be found in H. Wopfner, *Deutsche Siedlungsarbeit südlich des Brenners*, but the whole subject has been elaborately treated in O. Stolz, *Die Ausbreitung des Deutschtums in Südtirol im Lichte der Urkunden*, i–iv (Berlin and Munich, 1927–34).

[2] Singularly appropriate would be William of Malmesbury's description of the Vale of Gloucester, quoted in Dom D. Knowles, *The Monastic Order in England* (1940), p. 181.

The diocese of Brixen had belonged since the eighth century to the province of Salzburg, and all the bishops without exception were of German birth. To the west the diocese of Chur (of the province of Mainz) occupied the whole of the Vintschgau almost to the gates of Meran, and thus contributed another stream of German influence through Swabia and Switzerland. We may remark that the Carolingian frescoes in the church of St. Patroclus at Naturns have been connected with the Irish element in the school of St. Gall.[1] The county of Tyrol was finally absorbed into the Habsburg inheritance, and after the war with Venice in 1509 the frontier of Austria and Italy was drawn between Rovereto and Verona, where it remained until 1919. Yet the German impulse southwards had culminated in the latter part of the middle ages. With the Renaissance the Italian influence revived in the neighbourhood of Trent, and many of the more isolated German settlements gradually lost their identity. Moreover the Reformation weakened the German hold on the Church. Hitherto many of the parish priests had come from Germany, but now the supply began to shrink, and Italians took their place in some of the smaller German villages.

After this brief preliminary sketch of the general situation we can turn to the Oswald dedications one by one, beginning with the church at Rovereto, which is both the farthest south and the latest in the group. Until as late as the fifteenth century the little walled town, which crouches beneath the castle, had belonged to the parish of Lizzana, a village two or three miles to the south, but about 1250 a church dedicated to St. Thomas of Canterbury had been built for the benefit of priest and people just outside the walls on the far bank of the Leno, and to this was added about 1400 a church of St. Barbara, only a few yards from St. Thomas. These two churches, which must have later diminished in importance, fell victims to the reforming zeal of the Emperor Joseph II, and in 1785 were closed and then demolished. This high-handed procedure provoked a good deal of discontent, especially among the German colony in Rovereto, and as soon as the emperor was dead a wealthy silk-merchant, Oswald Candelpergher, bought up the ruins, and built at his own expense a new church of St. Oswald, close to the site of St. Thomas and immediately opposite his own family mansion.[2] Thus we find an odd conjunction of these two English saints in the suburb of Rovereto, and we can still see marked up the *Piazetta di S. Osvaldo* in the *Borgo di S. Tommaso*. Designed by Ambrogio Rosmini, a brother of the well-known philosopher, the church is a small well-proportioned quadrangular building, but is now unhappily closed to worship. Within the only notable feature is a picture of St. Oswald painted at Rome in 1795 by Christoph Unterbergher, a member of a family of artists from Cavalese (pl. XXXII, *c*).[3] We see St. Oswald on the field of battle, kneeling before the cross, as Bede relates, on the morning of his victory at Hevenfelth in 633. He has no halo, and a slender crown encircling his helmet on the ground is the only indication of his rank. The absence of the raven is not unwelcome. There is no trace of any earlier cult of St. Oswald in Rovereto and the title is evidently derived from the patron of the founder, in whose family the name is not uncommon. The Candelperghers, German in origin as their name betrays, had settled in Rovereto in 1666, having emigrated from Kastelruth north of Bozen, where, as we shall see, there had long been a church of St. Oswald. We shall find that our three remaining churches in the Trentino are likewise linked with the German-speaking district in the north.

---

[1] J. Garber, *Die romanischen Wandgemälde Tirols* (Vienna, 1928), pp. 17 ff.

[2] K. Atz and P. A. Schatz, *Der deutsche Anteil des Bisthums Trient* [Atz–Schatz], v (Bozen, 1910), pp. 189 f.; A. Stefani, *Documenti e Memorie intorno alla Chiesa Arcipretale di S. Marco in Rovereto* (Rovereto, 1900), p. 3; D. Zignolli, 'Memorie Roveretane' (manuscript in the Biblioteca Civica, Rovereto, before 1876), fo. 142 ff. Unfortunately the Candelpergher papers were destroyed in the First World War. I am grateful for the help and friendship extended to me in Rovereto by Commendatore D. Antonio Rossaro.

[3] D. A. Rossaro, *Iconografia della Chiesa Roveretana* (Rovereto, 1934), pp. 58 f.; S. Weber, *Artisti Trentini che operarono nel Trentino* (Trent, 1933), pp. 294 ff. We may notice incidentally that the picture of the martyrdom of St. Thomas of Canterbury by F. Boscaratti, formerly in his church at Rovereto, is not lost, as stated in Borenius, *op. cit.*, p. 103. It can still be seen in the church at Lizzana, but in a sadly damaged condition, as a result of careless handling when moved to a place of safety during the Second World War. Rossaro, *op. cit.*, p. 45.

The remote village of Bedollo straggles down a steep slope at the upper end of the Val di Piné, a beautiful and secluded valley in the rugged country some miles to the north-east of Trent. German was long spoken in a group of villages in this neighbourhood, and a study both of records and of the linguistic evidence has shown that the inhabitants migrated here probably in the early years of the thirteenth century.[1] It seems quite clear that the cult was brought with them by the original settlers, for the church of St. Oswald is mentioned in a document of 1299, and a certain Odoricus de Osw[aldo de Bedo]lo is recorded as early as 1262, and a part of the village has long been known as 'Swaldi', an evident corruption of the name of the patron saint. The present church was built in the seventeenth century and enlarged in 1711,[2] but is of little interest. A sixteenth-century bell is said to bear the effigy of the saint.[3] The *festa* is still kept on 5th August, but the story of their patron has fallen into oblivion among the people of Bedollo, and very few of their children are given his name. Their ancestors are thought to have been brought in by the German lords of the castles of Segonzano and Pergine and employed to cultivate the rough and thickly wooded mountains, neglected hitherto by the natives of Italian race, who had naturally made their homes in the more fertile and accessible villages. In documents of the thirteenth and fourteenth centuries these people are known as *roncatori* (weed-grubbers), and to them we may attribute our Oswald dedication in the Valsugana,[4] where high up on the crest of the mountain above Roncegno stands the little chapel of St. Oswald, which serves as a memorial to those who fell in the fighting here in the First World War. It used to be thought that the Germans were brought in for quarrying, but the frequent mention of *roncatori* in the records makes it more likely that they were primarily employed on the land.[5]

Similar conditions must have led to the building of the gaunt little church of Garniga, which stands far up on the wind-swept cliffs overlooking the Adige, just south of Trent. St. Oswald's church is first mentioned in 1377 and again in 1452, as a chapel united to the parish of St. Mary Magdalen, Trent.[1] The building dates from the sixteenth century with later additions, but is now a mere shell, stripped, bare, and desecrated, and ready to fall into ruins. The tradition of many centuries was broken in 1940 when the old church was abandoned for another dedicated to the Sacred Heart, with the result that St. Oswald is now forgotten in the village and his *festa* is no longer celebrated. The baroque marble altars, together with a very undistinguished picture of the Madonna, St. Oswald (with the raven), and St. Roch by a local artist, G. A. Pellegrini,[2] have been removed to the new building. There is also a fourteenth-century silver cross with figures of saints in relief at the end of the arms and of St. Oswald at the foot, and a seventeenth-century bell is stamped with his effigy. Miners at Garniga are recorded in 1242,[3] and it is possible that they were introduced by the Castelbarco family, who dominated this part of the Adige valley throughout the middle ages.[4]

---

[1] B. Gerola, 'Gli stanziamenti tedeschi sull' altopiano di Piné nel Trentino orientale', in *Archivio Veneto*, 5th ser., xi (Venice, 1932), pp. 1 ff.; xii (1932), pp. 129 ff. Cf. Stolz, *op. cit.*, i, 87.

[2] According to an inscription in the church. 1560 is given as the date of the building in O. Brentari, *Guida del Trentino*, i (Bassano, 1890), pp. 263 f. German is said to have been spoken there in the last century. *Forschungen zur deutschen Landes- und Volkskunde*, i (Stuttgart, 1886), p. 434.

[3] *Archivio Trentino*, xviii (Trent, 1903), p. 88.

[4] A. Prati, *I Valsuganotti* (Turin, 1923), pp. 79 ff.

[5] G. A. Montebello, *Notizie storiche topografiche e religiose della Valsugana* (Rovereto, 1793), p. 304. It has been suggested that when the mines were exhausted the workers transferred their attention to the soil. C. Battisti, *Studi di storia linguistica e nazionale del Trentino* (Florence, 1922), p. 171.

It is opportune at this point to make a diversion eastwards to see what we can find at Bassano, where the Brenta emerges into the plain from its Alpine valley. In the church of S. Vito on the outskirts of the town there is a very mediocre canvas of St. Oswald (with raven) painted in 1708 by Francesco Trivellini,[5] and there is a figure of the saint on the façade of approximately the same date. The origin of the church or chapel goes back into the early middle ages. In the fifteenth or sixteenth century it became attached to a hermitage, was visited by St. Ignatius Loyola in 1538, when two of his companions had gone into retreat there,[6] and was finally rebuilt in 1702.[7] All interest in St. Oswald has now expired and there is not a scrap of available evidence to suggest the origin of the cult.[8] The most likely hypothesis is that it was introduced in connexion with the pilgrimage to Sauris at the time of the rebuilding, when, as we have seen, the saint was becoming well known at Vicenza. Alternatively we may admit the possibility of German influence down the Valsugana, or through the German settlements in the hills round Asiago, known as the XIII Comuni.[9] Equally mysterious is the still vigorous cult of St. Oswald in the village of Cartigliano, near the Brenta about five miles south of Bassano. Verci[10] records that a picture was painted by

---

[1] F. F. degli Alberti, *Annali del principato ecclesiastico di Trento* (Trent, 1860), p. 319. The church and its fittings have been described in *Il Nuovo Trentino* for 8th April 1923. St. Mary Magdalen was the original parish of the German colony in Trent. Atz–Schatz, v, p. 176. The name Oswald is found in the neighbouring village of Cimone as early as the fourteenth century. C. Schneller, *Tirolische Namenforschungen* (Innsbruck, 1890), p. 249.

[2] Weber, *op. cit.*, p. 223. The valuable silver cross could not be found the day I visited Garniga. In fairness let me add that the memory of St. Oswald is being perpetuated by a fresco on the chancel arch of the new church.

[3] Alberti, *op. cit.*, p. 118. German names occur in a document of 1279. Schneller, *op. cit.*, p. 79. German was still spoken in Garniga about 1600. M. S. von Wolkenstein, *Landesbeschreibung von Südtirol* (Innsbruck, 1936), p. 103.

[4] O. Stolz, *Erläuterungen zum historischen Atlas des österreichischen Alpenländer.* Part III. *Tirol und Vorarlberg* (Vienna, 1910), pp. 199 ff. Cf. A. Perini, *I Castelli del Trento* (Milan, 1835), pp. 17 ff.

[5] G. B. Verci, *Notizie intorno alla vita e alle opere de' Pittori, Scultori e Intagliatori della città di Bassano* (Venice, 1785), p. 267.

[6] *Epistolae P.P. Paschasii Broëti, Claudii Jaji, Joannis Codurii et Simonis Roderici. Monumenta Historica Societatis Jesus*, x, Fasc. 116 (Madrid, 1903), pp. 488 f. The companion figure to St. Oswald on the façade appears to represent St. Ignatius.

[7] *Di Bassano e dei Bassanesi illustri* (Bassano, 1847), p. 78.

[8] I am indebted to the late Professor P. M. Tua, the leading authority on the antiquities of Bassano, for confirming me in this negative conclusion. His son, Dr. Massimo Tua, has been kind enough to make further fruitless research, and he assures me that there is nothing relevant to our subject in P. Michieli, *Cenni storici della chiesa di S. Vito di Bassano e di Fra' Antonio Eremita* (Bassano, 1893).

[9] *Enciclopedia Italiana*, s.v. 'Tredici Comuni'.

[10] *Op. cit.*, p. 212.

Girolamo da Ponte (a son of Jacopo Bassano) early in the seventeenth century for the 'altar of St. Oswald' in this church, but he does not include our saint in the subject represented, and it is not clear whether the altar was known as his at the time when the picture was provided. Devotion to St. Oswald has been sustained here by a relic of a minute and indistinguishable particle of his anatomy preserved in the sacristy. SS. Simon and Jude, the patrons of the church, appear to be eclipsed by St. Oswald, whose *festa* is kept by a procession round the parish. A large eighteenth-century wooden statue of the saint, stored in a loft adjoining the church, is permitted to join the procession once every fifty years, and I understand that the next *Anno Santo* will be celebrated in 1957.[1]

Reverting now to the dedications in the German Tyrol, from which those in the Trentino must have been derived, we may first notice the church near Kastelruth, whence the Candelperghers brought the name of our saint to Rovereto. This tiny hamlet, overlooking the valley of the Eisack between Bozen and Brixen beneath the jagged peaks of the Schlern, is first mentioned by name in a deed of 1234, whereby the abbot of Georgenberg granted a property there to the count of Tyrol, and to this period belong the tower and nave of the church, to which a new chancel was added early in the sixteenth century.[2] The keystone of the chancel vault is carved with a droll figure of the patron saint balancing a crown of generous proportions on his head, while the raven flies beside him with a ring in its beak. The altar-piece by Franz Unterbergher,[3] a relative of the artist we met at Rovereto, shows the Madonna and Child with St. Sylvester (co-patron) and St. Oswald, holding a ring between finger and thumb as he gazes at the Virgin with a rather unconventional leer. Below him is the raven carrying a large two-handled vessel. I am told that in the summer the parishioners are too busy at work on the mountains to have time for festivities at home and they keep their *festa* for St. Sylvester, who is remembered at a more convenient season on the last day of the year. Perhaps this partly explains why Oswald is so seldom taken for a Christian name here, only two children receiving it in the last quarter of a century.

A modern window in the church given by the Wolkenstein family, who still hold their ancient castle of Trostberg a few miles farther north, reminds us of their long connexion with the place and suggests a reason for their favouring the name of Oswald (like the Candelperghers) for many generations. The most celebrated member of the family is Oswald von Wolkenstein (sometimes known as 'the last of the Minnesänger'), poet, traveller, and adventurer, whose breathless exploits are calculated to make the hair of even the twentieth-century reader stand on end.[4] In 1407, as a thank-offering for delivery from shipwreck and captivity with the Moors of Barbary, he founded a chapel of St. Oswald, to be served by two chantry priests, above the porch at the west end of the cathedral of Brixen. The old cathedral was taken down in the eighteenth century and rebuilt after the prevailing taste, but the link with the famous Tyrolese poet was not allowed to be broken. When Count Migazzi, a canon of Brixen then employed at the papal court, offered to present an altar of St. John Nepomuck on the south side of the nave, two designs by one of the best artists in Rome were submitted to the Chapter, who expressed a desire that saints formerly honoured in the old cathedral should be commemorated here. And so in 1754 we find Migazzi writing to his agent from Madrid, where he was nuncio: 'Trage auch kein Bedencken, das anstand der Vorstellung des Glaubens und Hoffnung die 2 hll. Martyrer Oswald und Christoph auf dem Altar zu stehen kommen.' We have here a precise parallel to what must have happened in the case of S. Stae at Venice. Between the design and its execution somebody intervenes to change the statues. The altar with its flanking figures was finally consecrated in 1765 by Migazzi himself, then Cardinal Archbishop of Vienna (pl. XXXIV, *b*).[1] Until a few years ago St. Oswald, again in company with St. Christopher, could be seen in an early fifteenth-century fresco in the cloister. Unfortunately this fourth arcade has suffered from damp in recent years and the paintings have been stripped from the wall.[2]

---

[1] Professor Tua told me that the history of Cartigliano remains entirely unexplored. The raven's ring (faithfully represented on the statue) is explained here as a gift from St. Oswald to the poor. The relic is vouched for by a diploma of authenticity dated 'Rome 16 January 1736'. Is this relic a fragment of the thumb at Sauris, and was it brought from there by the Nobile Cavaliere Simeon Fabrizio de Negri, at whose instance the diploma was granted?

[2] Atz–Schatz, iii (1905), p. 260; J. Weingartner, *Die Kunstdenkmäler Südtirols* [*K.S.*], ii (Vienna, 1923), p. 323; L. Santifaller, *Regesten des Kirchenarchives Kastelrut 1295–1570* (Innsbruck, 1923), *passim*. As elsewhere, the name Oswald comes into more frequent use at the end of the middle ages.

[3] Weber, *op. cit.*, p. 296. Franz Unterbergher (1706–96) worked for forty years in Brixen and its surroundings. This picture is not mentioned by Weber, though it is listed by Thieme-Becker, s.v. 'Unterbergher'.

[4] A. von Wolkenstein-Rodenegg, *Oswald von Wolkenstein* (Innsbruck, 1930), p. 16. There are said to have been paintings and an inscription on the wall of the nave at

At this point we may notice the dedication at Mauls between Brixen and the Brenner, where a church was mentioned in 1345, but was rebuilt in 1827.[3] A wooden shrine in the village, said to be of the sixteenth century, shows St. Oswald holding a double cup on which the raven is perched, resembling the examples so often seen in Switzerland. The *festa* is still kept here on 5th August.

Returning to Bozen and following the valley of the Etsch into the Vintschgau we shall find remarkable evidence of the reputation of our saint. In Bozen itself there was a little church of St. Oswald, first mentioned in 1285 and unhappily destroyed by a bomb in the Second World War.[4] There was an early fifteenth-century painting of St. Oswald enthroned on the outside of the west wall, and on a fragment of the inner south wall the remains of another can still be seen, where the king is distributing alms to the beggars, who approach him on staves and crutches. These frescoes may be the work of the master who painted the façade of St. Vigil unter Weineck, originally the castle

---

St. Oswald (Kastelruth) in memory of his escape from shipwreck. Atz–Schatz, iii, 261.

[1] *Jahrbuch des Kunsthistorischen Institutes der K.K. Zentralkommission für Denkmalpflege*, xiv (Vienna, 1922), pp. 127 ff., 156.

[2] J. E. Walchegger, *Der Kreuzgang am Dom zu Brixen* (Brixen, 1895), p. 73. This painting has been attributed to a Master John of Bruneck. J. Weingartner, *Gotische Malerei in Südtirol* (Vienna, 1948), pp. 34 ff. The figure of a king in a votive picture of Hilpbrand von Passeir (*c.* 1410) in the monastery of Neustift, near Brixen, has been identified with St. Oswald. *K.S.* ii, 42. The attribution, however, is doubtful, and St. Sigismund may be preferred. N. Rasmo, *Arte medioevale nell' Alto Adige* (Bozen, 1949), p. 21, pl. 32.

[3] G. Tinkhauser, *Topographisch-historisch-statistische Beschreibung der Diözese Brixen*, i (Brixen, 1855), pp. 646 f.; *K.S.*, i (1923), pp. 176 f.; G. Schmid, *Urkunden und Akten Regesten aus dem Dekanats-Archive Stilfes vom Jahre 1300 bis zum Jahre 1810* (Innsbruck, 1912), p. 29. A painting on the ceiling of St. Oswald giving bread to the poor and an altar-piece, now obscured by a prominent statue of Christ, are the work of Renzler, a local artist. There is an altar of St. Oswald at Obervintl. *Ibid.*, p. 35. An eighteenth-century shrine at Mauls commemorates delivery from plague in 1735 through the prayers of St. Sebastian and St. Roch. Evidently St. Oswald was not venerated as a plague saint in these parts.

[4] Atz–Schatz, i, 84; *K.S.* iii, 2 (1926), pp. 130 f. It was rededicated in 1323 and 1405.

chapel on the Calvarienberg just outside the town (pl. xxxiv, *a* and *c*).[1] The whole of the upper half of the wall is filled with a scene of God the Father in a mandorla and below him a sick knight in bed, presumably a member of the Weineck family, whose arms are emblazoned on the left.[2] Scarcely distinguishable is the devil disguised as a knight approaching to lay his hand on the bed, while confidence is imparted to the patient by the presence of his heavenly patrons St. Vigil, the Virgin, St. John Baptist, and St. Anne with the Virgin and Child. The lower half of the wall is divided by the door into two scenes, on the left St. Martin giving his cloak to the beggar, and on the right St. Oswald handing his bride to Christ in the guise of an importunate pilgrim.[3] These two parallel episodes are not very clearly connected with the scene above, and perhaps they were meant by their double emphasis to convey a forceful lesson to all who entered the chapel. The two saints, both renowned for their generosity, may have been favourites of the Weineck family, and I shall later suggest a further possible significance in the coupling of St. Oswald with St. Martin.

A figure of a king probably meant for St. Oswald can also be seen in an elaborate early sixteenth-century wooden retable in the church of St. Johann im Dorf, Bozen, as well as a fresco recently uncovered there.[4] One more Oswald dedication is provided in the suburb of Gries on the other side of the river Talfer, the former chapel of the castle of Troyenstein.[5] It is said to have been built in 1323 by Henry king of Bohemia to expiate the sacrilege of his father Meinhard II of Tyrol, but it is not unlikely that the Lords of Weineck, the previous owners of the castle, had already provided a chapel there. On the altar is an eighteenth-century figure of St. Oswald in armour with a covered cup. The chapel is now seldom used.

At Meran we are reminded of St. Oswald by three surviving works of art. High up on the east wall of the suburban church of Untermais is a fresco (1444) of the dream of St. Joachim and his meeting with St. Anne, accompanied by figures of St. Wolfgang and St. Oswald.[6] Allied in style to this painting is another in the castle chapel of Meran,[7] where the saint appears to carry a cup surmounted by a bird, while in the chapel of the castle of Tyrol St. Oswald bearing a cup can be seen in a wooden triptych of about 1480.[8]

Continuing our brief survey of the Vintschgau we must not omit the figure of a king holding a covered vessel, whom we may safely take for St. Oswald, among the frescoes of the ruined church of St. John at Taufers in the Münstertal (pl. xxxv, *a*).[1] These are stiff and ungainly, the product of a local school (*c*. 1400), yet the king on his ornate Gothic throne is in his way impressive. That he was well known in this valley is shown by the existence of a chapel to his honour near the Benedictine convent of Münster a mile farther on, just over the Swiss border.[2] Finally, we must remark a painting (*c*. 1500) on the outside wall of a house in the village of Tartsch of a Coronation of the Virgin, flanked by St. Peter and St. Oswald.[3] Here he carries a double cup with raven and ring, as in the Swiss examples.

---

[1] *Ibid.*, p. 136; Atz–Schatz, i, 101 f.; A. Morassi, *Storia della Pittura nella Venezia Tridentina* (Rome, 1934), pp. 199, 217, fig. 115; K. Atz, *Kunstgeschichte von Tirol und Vorarlberg* (Innsbruck, 1909), pp. 709 f.; *Zeitschrift des Ferdinandeums*, xlviii (Innsbruck, 1904), pp. 210 ff. It is remarkable that the St. Oswald scene was still unrecognized as late as 1893 by a writer in *Der Kunstfreund*, ix (Bozen, 1893), p. 35. The correct identity was published the following year. *Ibid.*, x (1894), p. 38. I am told that the queen's head-dress is seldom found later than 1400, but 1420 is suggested for this painting in J. Weingartner, *Gotische Wandmalerei in Südtirol*, p. 27.

[2] He is thought to have been Hans von Weineck, who died in 1421. *Zeitschrift des Ferdinandeums*, xlviii, 215.

[3] *Archaeologia*, xciii (1949), p. 116. This is the only example in art known to me of this episode in the German Oswald legend. It should be noted that the beggar in the story of St. Martin was also thought to have been impersonated by Christ. Other examples of this theme are cited by H. F. Rosenfeld in *Acta Academiae Aboensis, Humaniora*, x, 3 (Åbo, 1937), pp. 431 f.

[4] B. Riehl, *Die Kunst an der Brennerstrasse* (Leipzig, 1908), pp. 202 ff., fig. 78, and private information.

[5] Atz–Schatz, i, 212; *K.S.* iii, 2, pp. 219 f.; B. Weber, *Die Stadt Bozen und ihre Umgebung* (Bozen, 1849), p. 268.

[6] Atz, *op. cit.*, p. 736, fig. 725; *K.S.* iv (1930), p. 103; Weingartner, *Gotische Wandmalerei in Südtirol*, p. 46, fig. 113.

[7] *K.S.* iv, 152.

[8] *Ibid.*, pp. 210 f., fig. 94.

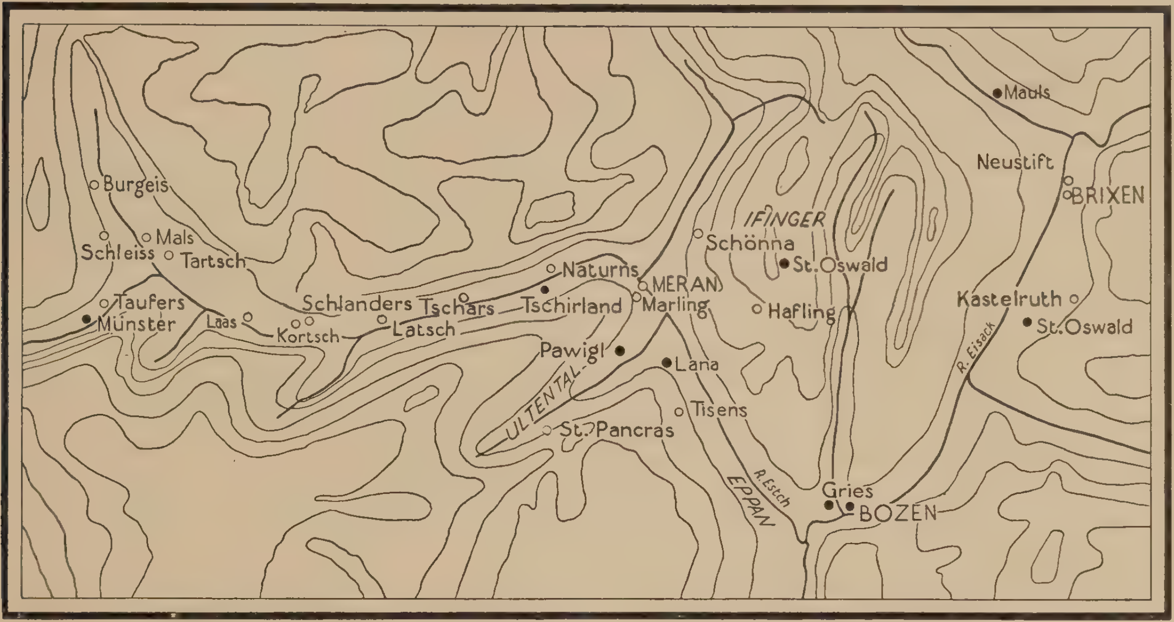


FIG. 7. The upper valley of the Etsch.

All this goes to show that there was at one time quite a ferment of devotion to St. Oswald in the upper valley of the Etsch, to which our next three dedications may provide us with a clue. The small church at Tschirland, south of the river and opposite Naturns, with which it is now united, is late medieval, reconstructed in the seventeenth century.[4] It is said to be first mentioned in 1483, but, as we shall see, there is a much earlier record, which may hitherto have been overlooked by the local historians. The *festa* is still kept on 5th August. At Pawigl, a minute village nestling in the steep slope of the Vigiljoch near Lana, the church was rebuilt in 1874.[5] Oswald is still a not uncommon name here, and in the sacristy is an attractive little eighteenth-century wooden figure of St. Oswald, with the raven on his wrist, which is carried round the parish in procession on the *festa*. An indulgence of 1487 has been said to contain the earliest record of the church, which was reconsecrated in 1664, but its history is actually a good deal older.

---

[1] *Ibid.*, p. 367; *Jahrbuch des Kunsthistorischen Institutes der K.K. Zentralkommission für Denkmalpflege*, x (Vienna, 1916), pp. 47 ff., fig. 22; Morassi, *op. cit.*, p. 191.

[2] *Tirolische Geschichtsquellen*, iii (Innsbruck, 1891), pp. 240 f. The Frauenmünster was closely connected with the families both of the Engadine and the Vintschgau. *Ibid.*, p. 146. The endowment for the chapel lay in the parish of Mals. It may be identified with the chapel of St. Oswald in Sielva, which is mentioned in 1360. E. Poeschel, *Die Kunstdenkmäler des Kantons Graubünden*, v (Basle, 1943), p. 385.

[3] *K.S.* iv, 392.

[4] *Ibid.*, p. 239; Atz–Schatz, iv (1907), p. 388. These writers repeat, unsupported by any evidence, that an Oswald dedication warrants a church of very early foundation. Perhaps they assume that St. Oswald was introduced by the missionaries of the eighth century and later.

[5] *K.S.* iv, 78; Atz–Schatz, iv, 44; J. Staffler, *Das deutsche Tirol und Vorarlberg*, iii (Innsbruck, 1847), p. 756.

In the tenth and eleventh centuries the powerful Bavarian family of Welf were possessed of large, but now indefinable, estates both north and south of the Alps, and in particular in the neighbourhood of Bozen and in the Vintschgau.[1] As we have shown elsewhere,[2] the monastery of Weingarten in Swabia was a favourite foundation of the Welfs, and it is therefore no surprise to find that this house was an important landowner in the South Tyrol throughout the middle ages. We have already remarked that the rich vineyards in these southern Alpine valleys offered a prize much coveted by the ecclesiastical establishments of Germany, in fact no less than twenty-one German monasteries owned properties in the vicinity of Bozen alone, and others had ample endowments in the Burggrafenamt and the Vintschgau.[3] As a rule these estates were not held in compact masses, but were scattered here and there in no particular relation to one another,[4] except that they were often connected with their owners by a chain of farms and hostelries, by which the wine could be conveniently transported across the mountains.[5] In all these districts the Welfs were at one time or another powerfully entrenched, and were still represented well into the thirteenth century by the counts of Eppan, south of Bozen, who were an illegitimate branch of the family. An old tradition that Henry son of Rudolph and brother of Welf II met his death when hunting at Lana about 990 is the earliest evidence we have for the Welf connexion with this region.[6]

In the thirteenth century Weingarten was involved in litigation with the counts of Tyrol about rights of jurisdiction in its Tyrolese properties, and we can unfortunately place no reliance upon certain alleged papal bulls of 1098, 1105, and 1143 and an imperial charter of 1155, which were probably forged about 1276 to further the claims of the monastery.[7] The references they contain to Lana and Pawigl have, therefore, little value for any period earlier than the date of the forgery itself. By this time, however, our feet are more securely planted. We have a record of a dedication in 1270 by Bishop Egno of Trent of a chapel in Oberlana in honour of SS. Martin, Oswald,

---

[1] O. Stolz, *Die Ausbreitung des Deutschtums in Südtirol*, iii, 121.

[2] *Archaeologia*, xciii (1949), p. 106.

[3] Stolz, *op. cit.*, p. 25.

[4] H. Wopfner, *Beiträge zur Geschichte der freien bäuerlichen Erbleihe Deutschtirols im Mittelalter* (Breslau, 1903), p. 68.

[5] O. Stolz in *Vierteljahrschrift für Social- und Wirtschaftsgeschichte*, viii (Berlin, 1910), pp. 203 f.

[6] E. Krüger, *Der Ursprung des Welfenhauses und seine Verzweigung in Süddeutschland* (Wolfenbüttel, 1899), pp. 147 f.; *M.G. Necrologia Germaniae*, i, 223. The Necrology is dated *c.* 1200, and Henry is commemorated on 8th February, but the statement that the fatality occurred at Lana is a fifteenth-century addition. However, we find it repeated in the *Historia Welforum*, which in this part is as early as *c.* 1170. *M.G. SS.* xxi, 460. The story is first related in Ekkehard, *Casus S. Galli*, *M.G. SS.* ii, 87 f. We are told in another document that Welf IV and his wife, Judith of Flanders, donated to Weingarten in 1094 'aliud mansum apud Mals et allodium quidem Bertolfus ei appropriavit in Venusta Valle et in Langobardia'. *Wirtembergisches Urkundenbuch*[*W.U.*], i (Stuttgart, 1849), p. 301; *Tiroler Urkundenbuch* [*T.U.*], i (Innsbruck, 1937), no. 117. In the Necrology (p. 231) this Bertold is said to have given a 'predium in Leunon [Lana]', which was confirmed by Welf. The deed of endowment by Bertold is a forgery. *W.U.* iv (1883), Appendix, p. xlviii; *T.U.*, no. 101.

[7] O. Stolz, *Politisch-historische Landesbeschreibung von Südtirol*, i (Innsbruck, 1937), p. 163.

Faith, and Benedict.[1] Lana was the centre where the Weingarten estates were administered, and the chapel of SS. Martin and Oswald was built quite near to the house of the monastic bailiff.[2]

A bull of Nicholas III in 1278 confirmed the rights of Weingarten in various possessions, mentioning Schirnum [Tschirland] with its chapel of St. Oswald, and Pawigl with two chapels, dedicated to SS. Peter and Vigil and to St. Oswald.[3] From a mass of evidence[4] we can see that the Welf estates in the Tyrol must have been very extensive, and that no small proportion of them was bestowed upon their favourite monastery of Weingarten. Furthermore, the origin of the three dedications at Lana, Pawigl, and Tschirland has now become apparent. As I have already explained, the bringing of the relics of St. Oswald to Weingarten by Judith of Flanders in 1094 led to his adoption, together with St. Martin, as a patron of the monastery, and possibly of the Welf family as well, with the resulting diffusion of his cult in Württemberg and Switzerland.[5] The two frescoes of St. Martin and St. Oswald on the church of St. Vigil at Bozen now gain an added significance to that of two closely parallel acts of Christian charity. These two saints are quite likely to have become patrons of the Weineck family through contact with the local representatives of Weingarten, and it is reasonable to suppose that the cult was fostered in Bozen itself through the zeal of the Weinecks. The name Oswald, though comparatively rare in the earlier period, becomes increasingly frequent in the fourteenth and fifteenth centuries. The earliest instance I have found in this region occurs in a list of witnesses to a deed of 1210 belonging to the monastery of Marienberg, close to Burgeis, where the Welfs had owned the church of S. Zeno.[6] A connexion is, perhaps, moderately plausible. A century later the name came into more general favour and was adopted by many of the more prominent families.[7]

And now for our conclusions, meagre though they may appear. We have not yet found a date earlier than the thirteenth century for any of these dedications in the South Tyrol, and there has been nothing to suggest that the cult of St. Oswald is very much older in these parts. It may be significant that there is no mention of him in a twelfth-century calendar of the diocese of Brixen, nor in the early thirteenth-century *Calendarium Wintheri*, though his name does appear in a calendar of the twelfth century from the diocese of Chur and in another of the same period belonging to the monastery of Neustift,[1] which stubbornly held aloof from Brixen and followed the use of Salzburg.[2] The origin of the relic at Sauris is lost in obscurity. All that we can assume is that the tradition derives eventually from Salzburg, whence it trickled over the Alps in the thirteenth century, and finally, as we have seen, percolated through to Venice and the cities of the plain.[3] A number of villages named St. Oswald, both in Carinthia and Styria, testify to the widespread popularity of the saint north of the Alps.[4] A great revival in the veneration of our saint spread through Germany in the twelfth and thirteenth centuries, possibly as a result of the military spirit awakened by the Crusades, and we need not, therefore, be surprised to find him crossing the great international highway of the Brenner at this period. The fresco at Bozen shows us that the German Oswald legend came to be known and loved in the Tyrol. A striking parallel to this diffusion of interest in St. Oswald south of the Alps is provided in certain respects by the cult of St. Leonard, who, like St. Oswald, was also imported from abroad into south Germany and for some considerable time lay more or less dormant, until through Cistercian influence he became extremely popular as a peasant saint, and was later taken over the Brenner long after the original settlers had made their homes in the valleys of the Eisack and the Etsch. In fact, like St. Oswald, we find him carried south by the groups of German colonists, who penetrated the Trentino in the twelfth and thirteenth centuries, leaving his mark in churches and place-names in the dioceses of Belluno, Padua, Verona, and Vicenza. No trace of either saint is found in the dioceses of Brescia and Como.[1]

---

[1] *W.U.* iv, App., p. lii. No doubt a diploma of indulgence granted by the bishop of Trent in 1270 to Weingarten, 'feudatorio della Chiesa di Trento', was connected with this dedication. Alberti, *op. cit.*, p. 150. Indulgences were also granted by the bishops of Chur, Constance, and Regensburg. *W.U.* vii (1900), pp. 65, 117, 119, and again in 1276 by the bishop of Constance for the feasts of the four patron saints. *Ibid.*, p. 463.

[2] The ruins of this chapel are now transformed into a house. *K.S.* iv, 64.

[3] *W.U.* viii (1903), p. 124. Elsewhere in the Weingarten records we read of chapels of St. Laurence and of St. George at Lana, which to this day is still a long, straggling village, provided with numerous chapels. *K.S.* iv, 55 ff.

[4] It may be convenient to summarize the remaining evidence for the Welf and Weingarten properties in this part of the Tyrol. Earlier than 1078 the Welfs are recorded to have held lands in the Passeirtal. *Monumenta Boica*, xxix, 201. In 1126 Henry the Black exchanged with Weingarten a 'predium in Naturno', and in the same place a few years earlier Welf V had presented a property to the monastery of Raitenbuch, together with others at Schlanders and Marling. *W.U.*, iv, App., p. xi; *T.U.*, nos. 124–5. Weingarten owned land at Kortsch and Laas. *W.U.*, iv, App., p. xxiv. Also at Latsch. *Tirolische Geschichtsquellen*, iii, 279. Welf III had given land at Tschars to the monastery of Steingaden. *M.G. SS.*, xxi, 471. The same house must have derived its estate at Lana from the Welfs, *Monumenta Boica*, vi, 507 (a record of 1207). Weingarten had received property from a retainer of Welf IV and V at Schleiss, close to Mals, where we have already noticed a gift of Welf IV. *W.U.* iv, App., p. x. In the neighbouring parish of Burgeis Welf VI presented the church of S. Zeno to Ulrich VI of Tarasp, probably in 1148. *Forschungen und Mitteilungen zur Geschichte Tirols und Vorarlbergs*, vi (Innsbruck, 1909), pp. 35, 48. The Weingarten possessions in the Ultenta, and at Tisens were almost certainly the gift of the Welfsl though on this point we are not directly informed. *W.U.*, iv, App., pp. xix, xxiii.

[5] *Archaeologia*, xciii (1949), pp. 106 f.

[6] P. Goswin, *Chronik des Stiftes Marienberg* (ed. B. Schwitzer, Innsbruck, 1880), p. 77.

[7] I. V. Zingerle, *Die Oswaldlegende und ihre Beziehung zur deutschen Mythologie* (Stuttgart and Munich, 1886), p. 70.

---

[1] L. Santifaller, 'Calendarium Wintheri', in *Archivio per l'Alto Adige*, xviii—1923 (Gleno, 1926), pp. 362, 385.

[2] Riehl, *op. cit.*, p. 120. This and other differences between the contemporary liturgies of Brixen and Neustift, separated by only a mile or so of physical distance, may be explained by the fact that Neustift was originally subject to the metropolitan of Salzburg, and even after it had been handed over to the bishops of Brixen in 1227 continued to follow the Salzburg breviary as late as the fifteenth century.

[3] It is not unlikely that the tradition at Salzburg is derived from the eighth-century English missionaries. *Archaeologia*, xciii (1949), p. 115.

[4] A large number of Oswald dedications both in Germany and Austria are listed in J. Pölzl, *Der heilige König und Märtyrer Oswald, Stadtpatron von Traunstein, in der Geschichte, Saga und Verehrung* (Traunstein, 1899), a work which in other respects does not help us.

Between Sillian, on the Drau at the east end of the Pusterthal, and Kartitsch, a few miles up the valley of the Gail, lies the hamlet of St. Oswald with a church dedicated by a suffragan bishop of Brixen in 1360. There is nothing to show whether the foundations are older than the fourteenth century, but, as the inhabitants of Sauris are thought to have migrated from this valley, a connexion is possible. Tinkhauser, *op. cit.*, p. 540.

St. Oswald is found in twelfth-century calendars of the abbey of Moggio (together with other English saints such as Alban and Boniface). F. Altan, *De Calendariis in genere et specialiter de calendariis ecclesiasticis* (Venice, 1733), pp. 143, 166, 90, 92; C. Foligno, *Di alcuni codici liturgici di provenienza friulana nella Biblioteca Bodleiana di Oxford* (Cividale del Friuli, 1914). [In one of these manuscripts there is a note (1403) from the hand of 'ego presbiter Johanes plebanus in sauris'.) The abbey of Moggio owned large estates in Carinthia. A. Battistelli, *L'abbazia di Moggio* (Udine, 1903), pp. 10 f., 135 ff. St. Oswald appears in another late twelfth-century calendar, which also came from Moggio, though its origin is uncertain. A. Ebner, *Quellen und Forschungen zur Geschichte und Kunstgeschichte des Missale Romanum im Mittelalter. Iter Italicum* (Freiburg-im-Breisgau, 1896), p. 270. For information on this manuscript I am indebted to Canon Giuseppe Vale of Udine.

It may be added, in parenthesis, that this study is confined by the modern political boundary, which delimits a convenient geographical area. We have, therefore, taken no account of that part of the ancient diocese of Brixen which lay to the north of the Brenner, but I doubt whether the argument is materially affected by the omission.

Finally, while not suggesting that St. Oswald was first brought to the South Tyrol by the agency of Weingarten, I would submit that the cult in the upper valley of the Etsch may have been greatly stimulated through the influence of this monastery, mediating, as we have seen, a direct tradition from Northumbria.[2]

An ancient belief still survives in these Alpine lands to remind us how favoured a saint our English Oswald must have been in the middle ages, when his name may have been exchanged for some spirit of the mountains, who had been feared and worshipped there for centuries. Very early on every 5th August little groups of men and boys (and a few women), neatly attired in blue aprons and Tyrolese cockaded hats, can be seen making their way from the villages of Hafling and Schönna up the steep approaches to the Ifinger mountain north-east of Meran. A steady climb of three hours brings them to the bare rock-strewn slopes of the mountain's sharp and pitiless crags, for here in this desolate waste is a rude little chapel of St. Oswald.[3] Within are no seats, but on the south wall hang two rough figures of St. Nicholas and of St. Oswald, with a sword and a sceptre, on which his raven sits. By half past eight the priests have arrived, and, after reciting the first few lines of each of the four Gospels, together with prayers for deliverance from storm and lightning, they say two masses in rapid succession. The chapel is packed with silent worshippers, while 200 more are standing in reverent attention outside. Long ago, they say, there was a king Oswald of the Tyrol, who sought refuge from his enemies in the fortress of the Ifinger. In his reign there was neither war nor pest nor famine, and with his raven he made the weather. Once upon a time the statue of the saint was found by some shepherds buried in the Alpine roses, and they brought it down for shelter to their church at Hafling. But scarcely had darkness fallen when St. Oswald in a blaze of light burst from the church and returned to his refuge on the mountain. And so his chapel was built up there, and every year on St. Oswald's day they climb that long ascent to say their prayers, for they know that with the favour of St. Oswald the weather will be kind.[4]

---

[1] B. Gerola, 'Il Culto di S. Leonardo ed i suoi ex-voti nei XIII Comuni', in *Il Folklore Italiano*, v (Catania, 1930), pp. 99 ff.

[2] There are at least two other examples of monasteries north of the Alps bringing their own patron saints into their Tyrolese estates, but in neither case was there any diffusion of the cult. At Gagers, near Lana, a property belonging to the abbey of Füssen, there was a chapel of St. Magnus. This was a later foundation (*c.* 1700), probably on land formerly belonging to Weingarten, which sold its possessions to Füssen in 1694. H. Fink, *Die Kirchenpatrozinien Tirols* (Passau, 1928), p. 223; Atz–Schatz, iv, 33, 165. At St. Paul's in Eppan there was a chapel of St. Norbert on the estate of the Premonstratensian abbey of Wilten. Fink, *op. cit.*, p. 227; Atz–Schatz, ii, 216; *K.S.* iii, 3 (1929), p. 234. [Curiously, Fink has neglected to pay any attention to St. Oswald.]

[3] First mentioned in 1447. Atz–Schatz, iv, 262; rebuilt on a new site in 1879. *K.S.* iii, 1 (1929), p. 88.

[4] Zingerle, *op. cit.*, p. 72; C. A. Bernoulli, *Die Heiligen der Merowinger* (Tübingen, 1900), pp. 199 ff.; B. Pokorny, *Kirchen im Burggrafenamt* (Meran, 1929), p. 49. An earlier procession is said to be made by the men of Hafling at the beginning of June, when the mountain is first free of snow. It may be noted that ancient mythology is evident in the cult of the Three Holy Women, still to be found in the Tyrol and elsewhere. M. Andrée-Eysn, *Volkskundliches aus dem bayrisch-österreichischen Alpengebiet* (Brunswick, 1910), pp. 35 ff.; E. Hoffmann-Krayer, *Handwörterbuch des deutschen Aberglaubens*, ii (Berlin and Leipzig, 1929), s.v. 'Einbett'.

APPENDIX I

DEDICATIONS TO ST. OSWALD IN THE VENETO[1]

Province of Udine

Azzanello—a chapel.
Casada.
Casasola—church erected in 1751.
Casiacco—church.
Ceneda.
Cima Sappada—chapel erected in 1732.
Cimolais—chapel.
Claujetto—chapel.
Cleulis.
S. Martino al Tagliamento—chapel.
Mussons—church founded in 1770.
Prato Carnico—chapel at Avausa.
Racchiuso—chapel at Partistagno.
Sauris—church.
Tajedo—chapel at Villutta dedicated to SS. Peter and Oswald.
Tambre.
Udine—church founded in 1706.

Province of Venice

Loncon—chapel erected in 1648.
S. Donà di Pieve.

Places named S. Osvaldo are to be found near Valvasone and Polcenigo (Friuli) and Perarolo (Cadore).

Province of Treviso

St. Oswald is said to be venerated at S. Cristina di Quinta and Signoressa. Cf. *Elenco delle sagre e delle feste tradizionali popolari della Provincia di Treviso* (Treviso, 1938), p. 33.

APPENDIX II

A POPULAR fifteenth-century Life of St. Oswald in verse is preserved in a manuscript of the Fürstbischofliche Seminararchiv, Brixen (Cod. A. 22, fos. 184–5). I am deeply indebted to Dr. Karl Wolfsgruber for making me a transcript. It may be summarized as follows:

'St. Oswald was King of Norway, endowed with all virtues, and specially distinguished for his generosity. He was a protector of widows, orphans, and priests, an avenger of all injustice, who ruled his kingdom on the precepts of Holy Writ. The poor could ring a bell, which no wealthy man could ring, and so obtain the help of the king.

'King Oswald devoted himself to the service of God, and employed his raven to help the poor throughout his ten years' reign. The three Kings of England, Britain, and Mercia, who were all heathen, hated him on account of his faith and Oswald had to meet them in battle. So he had a double task—first he had to defend the Faith against the enemy kings, and secondly he served God with alms and prayer and fasting and other good works. After a reign of ten years St. Oswald with his army was slain at 'Marferfach'. At the place where he fell many wonders were wrought.

'A horse fell ill and could continue his journey no further. But at the place where Oswald died he sprung up and was at once restored. The rider came to an inn, where the innkeeper's daughter was ill, and he told them of the miraculous place. The daughter was brought there and after a refreshing sleep was made well on the spot. Since then many sick people have been healed there.'

---

[1] In compiling this list I have greatly benefited by the kind offices of the Director of the Biblioteca Comunale, Udine.

APPENDIX III

It may be convenient to finish with a few miscellaneous points, which for one reason or another were omitted from the previous paper on St. Oswald.

In the first place, when noting the extension of the cult of St. Oswald to south Germany through the English missionaries, I neglected to take account of Ireland as a possible medium of communication. Bede tells us expressly that the fame of St. Oswald spread to Ireland, where it was noticed by St. Willibrord in the wanderings of his early life.[1] St. Virgil, who was formerly abbot of Aghaboe, presided over the see of Salzburg from 743 until his death in 784, and it is not unlikely that knowledge of St. Oswald was brought by him and his fellow countrymen into Germany.

No explanation has been provided for the claim of the abbey of Notre Dame, Soissons, to possess the body of St. Oswald in the seventeenth and eighteenth centuries.[2] It is not clear whether it was included in a list of relics drawn up in 1480. I do not know whether it is more than coincidence that the Benedictine convent of Herford, in Westphalia, where there was at one time a relic of St. Oswald, was founded with nuns from Notre Dame, Soissons, early in the ninth century.[3]

Another curious by-path of the cult in France is to be found at Lantic, in Brittany, where the church is dedicated in honour of St. Oswald. The local legend is said to have transformed him into an Irish prince. The church is mainly of the seventeenth century and there is a statue of St. Oswald near the high altar.[4]

Through the kindness of P. Paul Grosjean, S.J., I have been provided with a photostat of an article on St. Oswald in an otherwise unprocurable Flemish periodical.[5] It does not add substantially to the information we have already collected. Naturally the writer is mainly concerned with the cult at Bergues St. Winnoc, and he makes use of an article, which I have already noticed, but been unable to consult.[6] One curious point emerges from the first nocturn of the office of St. Oswald:

Resp. Interea, praelio Edwinus occubuit:
Christus Oswaldum paterno regno restituit.
V. Tempora qui mutat, sub quo mare terraque nutat.

From this it would appear that at Bergues St. Oswald was regarded as a weather saint. Bayart tells us that an almost similar office is to be found in a thirteenth-century breviary at St. Gall, and infers that it was spread from Bergues into Germany, together with the belief that St. Oswald controlled the weather. On this hypothesis I feel unable to offer any comment.

---

[1] *Hist. eccles.* iii, 13.

[2] [M. Germain], *Histoire de l'abbaye royale de Notre Dame de Soissons* (Paris, 1675), pp. 400 f.; A. Baillet, *Les vies des saints* (Paris, 1715), s.v. August 5.

[3] R. Wilmans, *Die Kaiserurkunden der Provinz Westfalen 777–1313* (Münster, 1867), pp. 488 ff. According to a thirteenth-century manuscript, Waltger, the legendary founder of the abbey, brought relics of St. Oswald, together with his sword and helmet, from England to Herford, whence they were later removed to the village of Dörenberg.

[4] F. Duine, *Inventaire liturgique de l'hagiographie bretonne* (Paris, 1922), p. 134: R. Couffon, *Répertoire des églises et chapelles du diocèse de St.-Brieuc et Tréguier*, i (St. Brieuc, 1939), p. 214. M. Couffon tells me that he can throw no light on the age or the origin of the cult here. St. Oswald is mentioned with other English saints in the Dol Breviary of 1519. F. Duine, *Bréviaires et missels des églises et abbayes bretonnes* (Rennes, 1906), p. 57.

[5] W. Lampen, 'De vereering van St. Oswald bizonder in de Nederlanden' in *Ons geestelijk Erf*, i (Antwerp, 1927), pp. 142 ff.

[6] P. Bayart, 'Les offices de S. Winnoc et de S. Oswald d'après le Ms. 14 de la Bibl. Bergues' in *Annales du Comité flamand de France*, xxxv (Lille, 1926), pp. 1 ff.

Lampen has strangely overlooked the Oswald dedication at Zeddam in Gelderland which we have already discussed.[1]

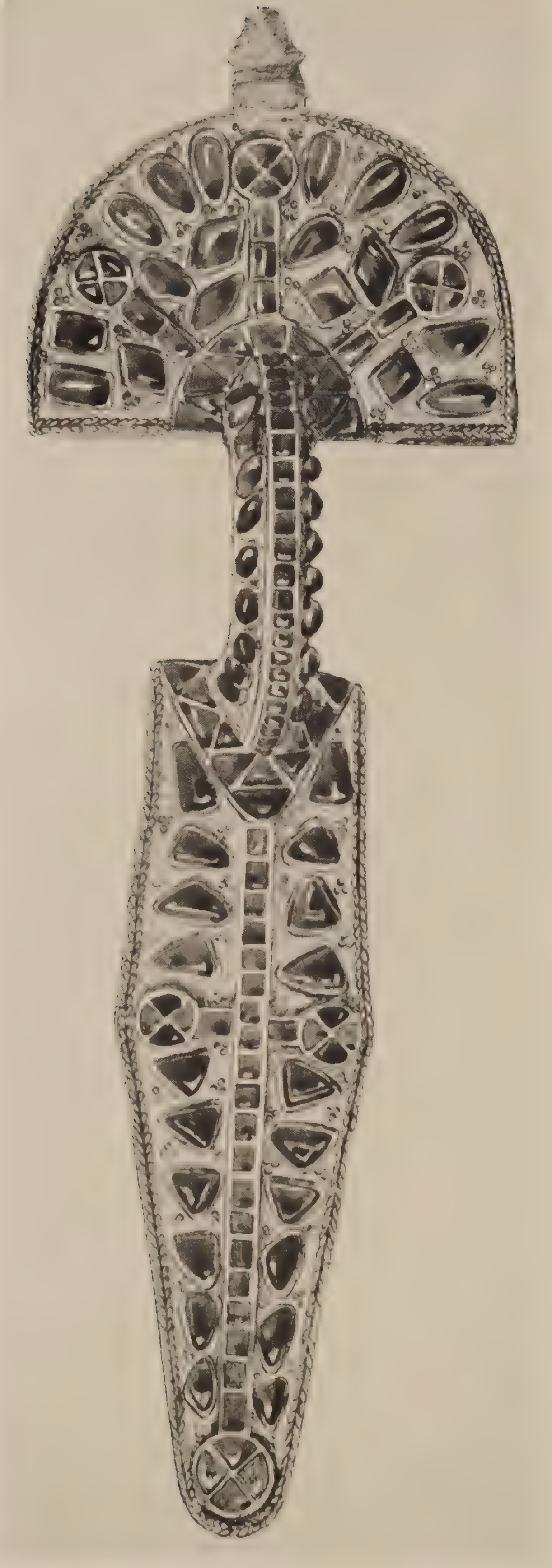
Finally, no trace has yet been found of a life of St. Oswald in Flemish by Jean de la Court, a Carmelite writer, published at Antwerp in 1615. It would be interesting to know the reason of his concern for St. Oswald, and it is to be hoped that a copy of his book will turn up some day.[2]

---

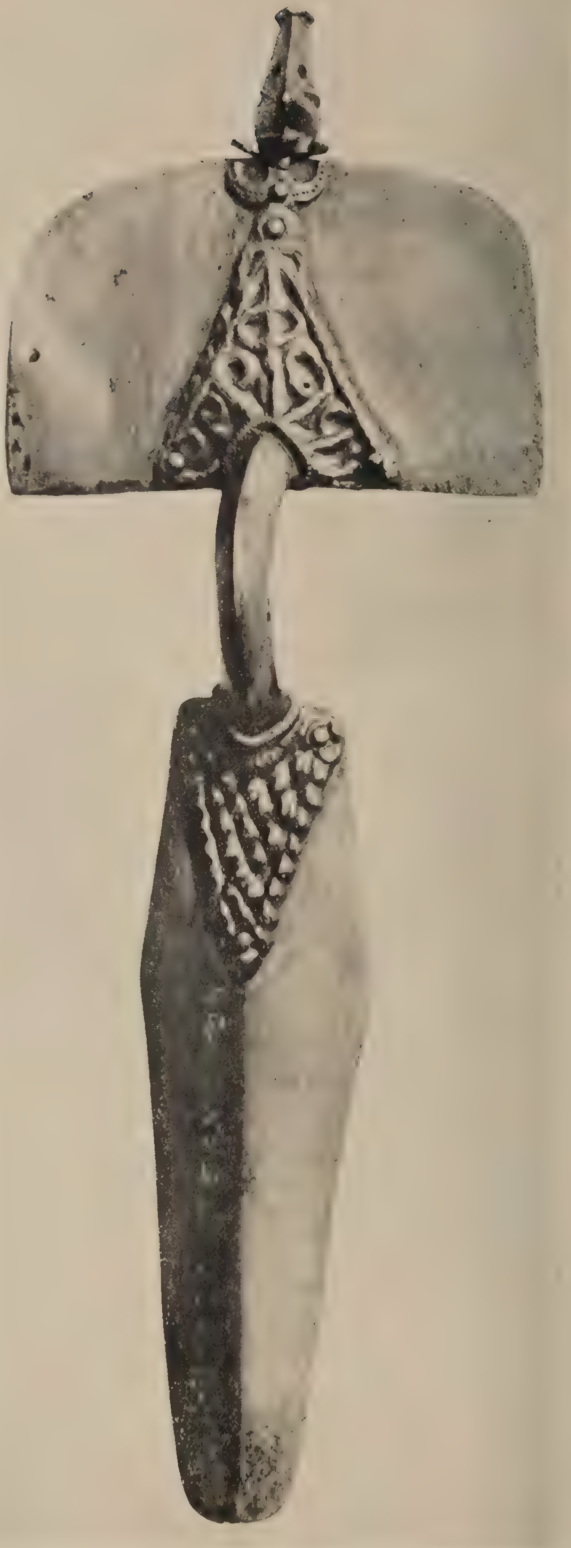
[1] The abbé Poquet in the *Bulletin de la société archéologique, historique, et scientifique de Soissons*, xii (Soissons, 1858), pp. 50 f., was inclined to believe that one of the coins with the bust of St. Oswald from Berg was a *type monastique* from Durham, Bardney, or Bergues St. Winnoc.

Dieren, where some of these coins were minted about 1580 (P. O. van der Chijs, *De Munten der voormalige Heeren en Steden van Gelderland* (Haarlem, 1853), p. 229), has been confused with Düren in G. Baesecke, *Der Wiener Oswald* (Heidelberg, 1912), p. 2.

[2] I have to thank P. Jean de la Croix, O.C.P., for making an unsuccessful search for this book in the libraries of Brussels. P. Grosjean has kindly supplied me with the earliest evidence of its existence, viz. F. Daniel, *Speculum Carmelitanum*, ii (Antwerp, 1680), p. 1111.



a. Gold jewelled brooch of type 2. Com. Szilágy, Szilágy Somlyó, Hungary ($\frac{1}{1}$)



b. Silver brooch of type 1, with gold appliqués. Mesö-Kaszony, Com. Bereg, Hungary ($\frac{1}{1}$)

Published by the Society of Antiquaries of London, 1951

Visigoth or Vandal?

By E. THURLOW LEEDS, Esq., M.A., F.S.A.

FOREWORD

FOR many years I have entertained considerable doubts in regard to the generally accepted chronology of some of the fine jewellery belonging to the early period of the great migrations in south-east Europe in the late fourth and early fifth centuries. This paper is an attempt to submit the evidence for reconsideration.

In its preparation I wish to acknowledge valuable advice received in consultation about various points at issue: to Professor C. F. C. Hawkes and to Dr. C. H. V. Sutherland who have both read the initial draft; to Professor R. Syme, who drew my attention to some of the more important historical literature of recent years.

The illustrations have been ably executed, under my instruction, by Miss Helen Gibson, a member of the staff of the Ashmolean Museum, and have been reproduced with their wonted care by the Oxford University Press.

For the plates a wide selection of brooches has been made. Of two varieties a single piece is reproduced full size on pl. XXXVI, in order to convey as exact an impression as possible of the size, even of the magnificence, of the types at their best. By their scale must be mentally gauged the other brooches illustrated in figs. 2–4, where all are shown half size.

In regard to the jewelled brooch illustrated on pl. XXXVI, *a*, it has been specially selected on account of its size. It is only known to the author from the half-tone block in J. Hampel's work (iii, pl. 22, 8–9). This gives only a poor idea of its splendour. To correct that deficiency a photograph has been made of a coloured drawing prepared on the basis of the details supplied by Hampel. There may be some discrepancy from the original in the settings along the ridge of the bow, which are described as *abwechselnde Granaten und Glasflüsse*. To judge from the half-tone illustration, *abwechselnde* is not exactly 'alternating'; the order of colours has been determined by personal interpretation of the original photograph. The general effect, however, is not appreciably changed.

ARCHAEOLOGICAL EXCURSUS

The typological method of dating applied to archaeological material is recognized as by no means infallible, and indeed liable to lead to serious error. It has, however, its use and value, provided it is subjected to severe checks at every stage. The present paper is an attempt to demonstrate a case where it seems the typological method has resulted in wrong conclusions, in the matter both of dating and of attribution.

The material here brought into question consists of four types of brooches, closely allied to one another and produced within the space of a century or even less. They are here briefly described with reference to two easily accessible works.

1. A brooch of which the ornamental portion (that is, exclusive of the spring-coil, pin, and adjuncts concerned with their working) is made from silver sheet-metal

(hence the name *Blechfibel*), with a semicircular head-plate and a long rhomboidal foot. The type derives from the transformation by peoples in the Pontic region of south Russia of the simple fibula with tendrilled foot (*Fibel mit umgeschlagenem Fuss*) by a process of concealing the functional portion of the brooch, as it were, behind an apron of thin sheet-metal (B. Salin, *Die altgermanische Thierornamentik*, figs. 19–27; Nils Åberg, *Die Franken und Westgoten in der Völkerwanderungszeit*, figs. 69 and 71) (pl. XXXVI, *b* and figs. 2–3 and fig. 4, 1–3).

2. An ornate type, best represented by numerous examples in the second hoard from Szilágy Somlyó, Com. Torontal, Hungary (J. Hampel, *Alterthümer des frühen Mittelalters in Ungarn*, Taf. xxi ff). Its outline is identical with that of the foregoing type, but it is more composite in structure, since where gold is not the sole metal employed, the framework, spring-coils, etc., are usually of silver, the upper surface having a gold overlay which is decorated with filigree and with garnets (or other stones or glass-paste) in cloisons along the ridge of the bow or in flat or cabochon settings on the surface of the head-plate and foot-plate (Salin, figs. 28, 30, and 353; Åberg, figs. 53–5 and 59). This is nothing more than a contemporary expression of type 1 in richer material; consequently it is of rarer occurrence (pl. XXXVI, *a*).[1]

3. A brooch, not unlike type 1 in outline, but constructed of a foundation of bronze, or even iron, overlaid with thin sheet-metal, silver, or gold, decorated with a design in chip-carving (*Keilschnitt*) style, embossed on the overlay before application to the foundation (Salin, fig. 29; Åberg, figs. 72–4). Sometimes it is entirely cast in silver or bronze, in an analogous style (Salin, fig. 41; Åberg, fig. 75) (fig. 4, 5–7).

4. A type, again closely related to type 1, in silver or bronze, but with head-plate of cocked-hat or semi-circular form; the rhomboidal foot-plate has an excrescent roundel at each angle, a feature unquestionably borrowed from buckle-plates, on which excrescences had a functional purpose to receive rivets securing the plate to the belt (Salin, figs. 351–2; Åberg, fig. 56) (fig. 4, 7–9).

Dating. A brief account of the opinions expressed on this question will suffice. According to Salin, p. 355, type 1 dates from the middle of the fourth century of our era, rather before than after. Type 2 is its contemporary and marches in step with it, both in various details of construction, as well as in a gradual change in the balance of the rhomboidal foot-plate.

Types 3 and 4 are later, exhibiting features like the chip-carving style previously employed, but in a restrained manner, on some examples of type 1. In a few cases type 3 adopts the excrescent roundels which appear consistently on type 4. M. Rostovzev (*The Iranians and Greeks in South Russia*, 1864), without any absolute definition, certainly also inclines to mid-fourth for type 1. Åberg places it around A.D. 400, but as a class from 400 to 450 (*op. cit.*, pp. 55–6). In this he is followed by E. Beninger,

---

[1] It should be understood that the examples of both types 1 and 2 illustrated on pl. XXXVI are imperfect, lacking the lateral framework which supported the spring, whether single-coiled as on that from Hungary or double-coiled as on that from Szabadbattjan (fig. 2, 7). A side-piece which was believed by Hampel to have belonged to a brooch very similar in detail and dimensions to that illustrated on pl. XXXVI, *a*, is figured by Hampel (*op. cit.*, ii, 31, figs. A–B). In every case these brooches when complete had a knob at the top of the head-plate and a pair or double pair of knobs at the sides.

('Der westgotisch-alanische Zug nach Mitteleuropa' (*Mannus-Bibliothek*, 51), pp. 25 ff.), who, however, retracts the covering period to 395–435. H. Zeiss (*Die Grabfunde aus dem spanischen Westgotenreich*, pp. 98–9) appears to agree in the main with Åberg, though he maintains that the type was still in vogue in Spain in the first half of the sixth century. To yet another opinion advanced by E. Brenner in 1914 in 'Der Stand der Forschung über die Kultur der Merowingerzeit' in *Bericht VII der römisch-germanischen Kommission*, pp. 273–6, particular attention is drawn at a later stage in this paper.

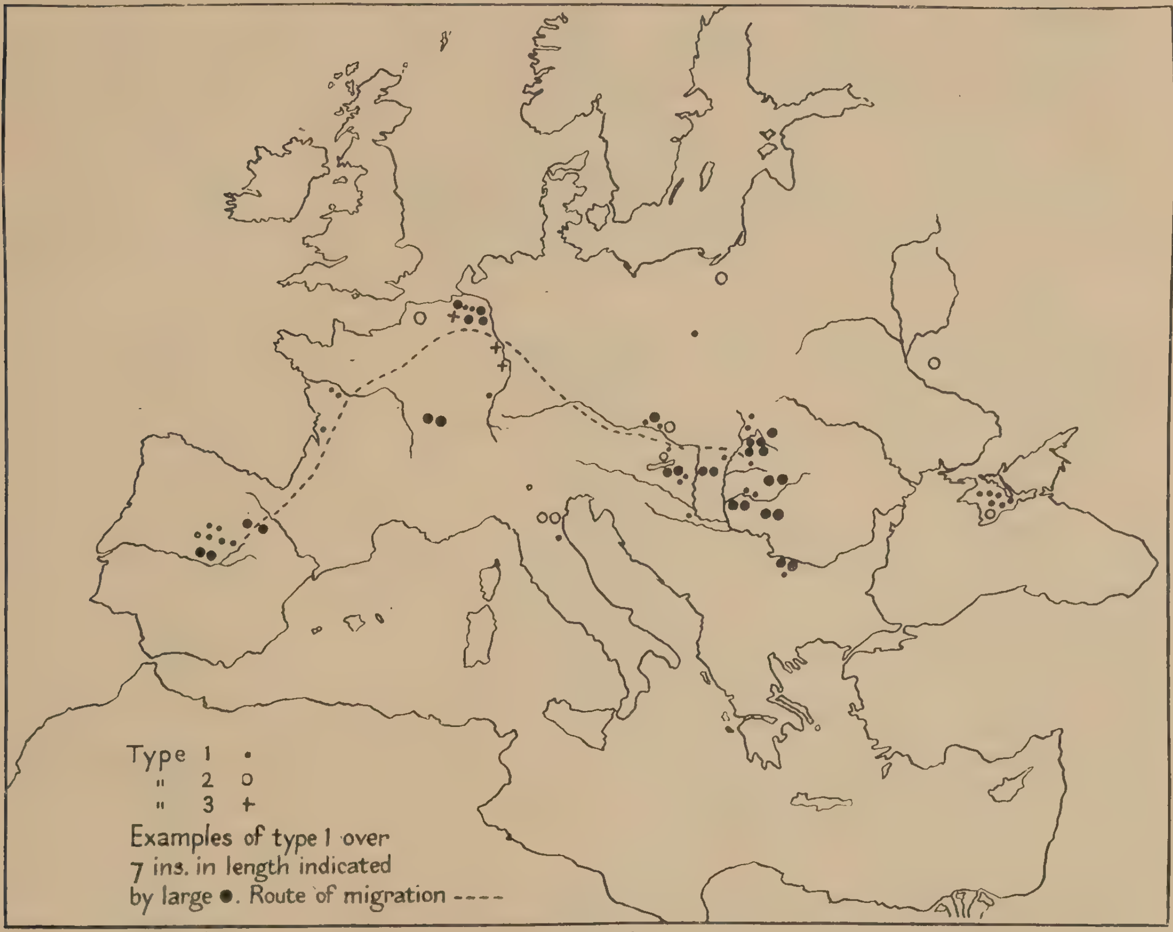

Type 1 •
" 2 o
" 3 +
Examples of type 1 over
7 ins. in length indicated
by large ●. Route of migration ----

FIG. 1. Map showing distribution of brooches of types 1–3 and route of march of Vandals and their allies.

Distribution. The distribution of these brooches, more especially of type 1, has been shown on maps both by Åberg and Beninger, but in neither case have the types been sufficiently clearly distinguished to allow of satisfactory inferences being drawn from them. The map accompanying this paper (fig. 1) aims at rectifying this need; some additions have been made to it. It is to be noted, however, that the evidence from Russia is scanty; it does not claim to be more than typical. I have been unable to add more, lacking access to Russian literature. For the present purpose this is not of great moment, since no one contests that these brooches have their origins in south Russia.

The salient features of the map are:

(i) The concentration of type 1 at four widely separate points:
  (*a*) in south Russia; in Hungary, east of the River Tisza from the foothills of the north-eastern Carpathians almost down to the Danube;
  (*b*) in Hungary (Pannonia inferior), west of the Danube between Buda and Belgrade, and also south of the River Drave (Sirmium), together with two examples found at Lom, Bulgaria, on the Danube east of Belgrade;
  (*c*) in eastern France, more particularly in the north;
  (*d*) in Spain, from the province of Soria to the vicinity of Toledo.

(ii) Type 2, in Russia, Hungary, Austria (near Vienna), Italy, and in north-eastern France.

(iii) Type 3, in western Germany, north-eastern France, with some aftermath in Spain.

(iv) Type 4, in Sirmium, Austria, and eastern France. This group is not shown on the map.

Size. Particular attention must be drawn to the size of some of these brooches. As regards type 1 in south Russia those known to me do not exceed 4½ in. in length; in Hungary, whether from areas *a* or *b*, many range between 6 and 8½ in.; in area *c* some are equally large; in area *d* they do not exceed 7 in.

Examples of type 2 run up to 10 in.; of type 3 up to 7 or 8 in. Those of type 4 vary widely, but one from Flamicourt, dept. Somme (fig. 4, 7), though imperfect, must originally have measured nearly 8½ in.

The importance of size lies in the fact that in type 1 the examples from Hungary and France, and in a lesser degree also those from Spain, represent a brooch comparable with any great square-headed brooch of early Anglo-Saxon times, and that no area outside those mentioned has yielded any specimen to match them. Readers are here invited to picture for themselves women wearing a pair of these *Blechfibeln*, 8 in. or more long and some 3–4 in. wide exclusive of the knobs at the ends of the axes of the spring-coils. In any stage of civilization they would be regarded as indicative of a highly prosperous community. The early *Blechfibel* was quite modest in size, as those from the Crimea, fig. 2, 1–2 or from Marosszentanna (Brenner, *op. cit.*, fig. 2), and doubtless small-sized examples continued to be made wherever the brooch was fashionable. What calls for particular notice is the marked regionalism in the distribution of the larger pieces in eastern Europe.

ARGUMENT

The Danube region, in particular modern Hungary, has yielded from its soil some of the richest finds of the migration period. Osztrópataka, Nagy Szent Miklós, and two hoards from Szilágy Somlyó immediately come to mind. With most of these this

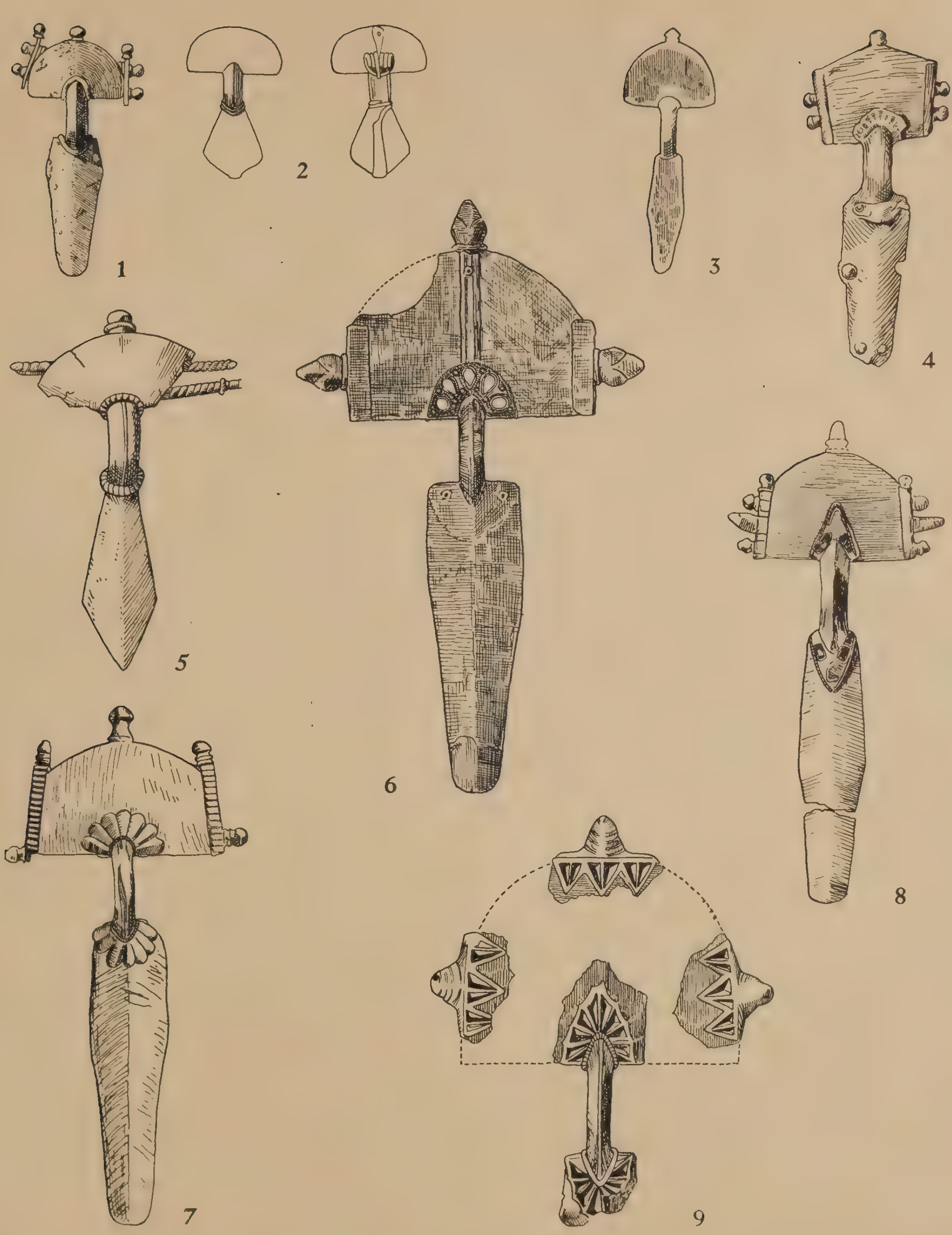


Fig. 2. Brooches of type I from Eastern Europe: 1–2. Crimea. 3. Kassa, Hungary. 4. Crimea. 5. Kalisz (Poland). 6. Hungary. 7. Szabadbattjan, Hungary. 8. Perjámos, Hungary. 9. Nagy Várad, Hungary. (½)

essay is not directly concerned; its purpose is to re-examine opinions expressed about the treasures from the second of the two hoards from Szilágy Somlyó, together with contemporary jewellery from other sites in the same region, much of it from graves.

About the cultural origins of this jewellery there is a general agreement. It derives from the Pontic area of the Black Sea coast, where it had been gradually developed among the Gothic tribes, East and West (Ostrogoths and Visigoths) in the one and a half centuries following their descent on south Russia from the shores of the Baltic. During that period it was diffused either by tribal movement or by commerce to areas farther west; apparently the latter medium was the more responsible.

Three important points are at issue. Firstly, distribution; secondly, attribution; and thirdly, date. For the first, on the accompanying map (fig. 1) there have been assembled all the occurrences of three types of brooches selected as representative of the material concerned.[1]

For the second, it will suffice for the moment to state that they are generally termed Gothic, and usually assigned to the West Goths, with the Ostrogoths retained in reserve.

For the third, the dating which has the widest support is 'about A.D. 400', though it is not quite clear whether *um 400* was intended to be the initial or central date. For example, Bernhard Salin assessed the date of type 1 (see excursus) as *c.* 350, and he is referring to its later stage when the greatest width of the foot-plate rises to or above the middle. On the other hand, Brenner in 1914 maintained that all the material under discussion must be relegated to a period after the death of Attila and the subsequent departure of the Huns from Europe in 452. This dating was contested by Åberg in a short paper in 1922,[2] and his arguments were more extensively developed in his larger work published in the same year. In his conclusion he assigns all the material to the half-century between 400 and 450. His estimate has, with some personal reservations, been accepted by E. Beninger and Hans Zeiss. In the first of his two works referred to above Åberg made use of a grave-find from Untersiebenbrunn, near Vienna, as his basis for arriving at a date *um 400* for type 1, but in the second work he seems definitely to incline to the 400–50 dating rather than to any time in the fourth century. Brenner's view was based on the contention that the jewellery exhibited a height of excellence both in regard to technical workmanship and artistic quality such as could not conceivably have been attained during the period of disturbance and turmoil which succeeded the Hun invasion. This, as I shall hope to show later, is a most important consideration; it is only in the application of the argument that Brenner seems to have gone astray.

Before, however, proceeding to discuss that point it is important to get the history of the period into proper focus. We must be perfectly clear about the localization of some at least of the numerous barbarian tribes whom the Roman Empire had for long enough sought to conquer or hold in check, tribes which under pressure from the advancing Huns became an even more serious menace.

---

[1] Brooches are the most distinctive class of relics by which the material stability of population in a given area during the migration period can be judged.

[2] 'Ein Beitrag zur Chronologie der Völkerwanderungszeit' (*Mannus-Bibliothek*, 22, pp. 108 ff.).

The Visigoths are known to have primarily occupied the region west of the Dniester, in modern Ukraine, with the government of Kiev as their centre. In the third century the Romans found themselves compelled to evacuate Dacia which included Roumania (both Transylvania and Greater Wallachia) and the Banat of Hungary as far west as the River Tisza, and it seems that the Visigoths took that opportunity to occupy part of the country. As evidence of their presence in Transylvania Brenner[1] cites finds in large cemeteries like that at Marosszentanna, near Maros Vásárhely, on the upper reaches of the River Maros in the heart of Transylvania. How far westwards they were able to extend their domination over the older inhabitants is a question.

Ludwig Schmidt in his *Geschichte der Wandalen*[2] discusses an interesting passage in the *Getica* of Jordanes,[3] where the author records a tradition of a heavy defeat of Vandals living on the lower reaches of the Maros and on its tributaries. The attackers were the Visigoths led by Geberich, and after an initially equal contest the fall of Visimar, the Vandal chief, led to the rout of his followers. The date of this event is considered to be 335, so that it might be accepted that the Visigoths by that stroke secured mastery over southern Hungary east of the Tisza and could then, and until they themselves were in turn disturbed by the Huns, have been responsible for any products of exceptionally fine character that have come to light in that region.

Here, however, a serious difficulty arises. The generally accepted date for the jewellery is 400–50, but in 376 the Visigoths, in fear of the advancing Huns who had already subjected the Ostrogoths and Alans (who also by that time may have moved westwards), found themselves under necessity of seeking admission into the Empire from Valentinian II. This request was granted; in 376 the major part of the Visigoths crossed the Danube and were temporarily settled in Moesia. With their subsequent history this paper has little concern, except to emphasize that they never again became a really settled people (except for a very brief interval in Italy and rather longer in southern Gaul) until they established the Visigothic kingdom in Spain well on in the sixth century.

How, then, is it possible to attribute to the Visigoths a wealth of rich archaeological material found in an area north of the Danube, if it is to be dated twenty-five years and more after they had abandoned a country to which they were never to return?

It is, in fact, no easy matter exactly to localize the Visigoths during the fourth century. Apparently Transylvania was for them more a place of refuge than of residence. They evidently still clung to their earlier home east of the Carpathians, since as late as 376 Athanarich in his contest with the Roman Empire was, it seems, working from Moldavia and Greater Wallachia. It was from there, too, that he attempted to stem the onrush of the Huns, who, however, turned the flank of his defence-line. His final retreat after Fritigern's departure with the major part of the Visigoths in 376 is recorded by Ammianus (xxxi, 4, 12): 'ad Caucalandensem locum altitudine silvarum inaccessum et montium cum suis omnibus declinavit, Sarmatis inde extrusis.'[4] This refuge, formerly identified with central Transylvania on the Kükulő tributaries of the River

---

[1] *Op. cit.*, pp. 262–7.

[2] pp. 12–13.

[3] §§ 113 ff.

[4] Cf. settlement of the Ostrogoths under Attila and Ernac's refuge by permission of Marcian at the confluence of the Danube and Tisza. (E. A. Thompson, *A History of Attila and the Huns*, pp. 153–4.)

Maros, has since been located by Patsch (*op. cit.*, p. 64) in the mountains bordering the east flank of the Banat, the one region to which the words *Sarmatis inde extrusis* can apply.

This appears to be the point nearest to the Hungarian plain at which the Visigoths can be said to have settled themselves at any time in the fourth century, still outside the area of distribution of the large *Blechfibeln*.

Under Åberg's dating the Ostrogoths or East Goths would have a better claim. That branch of the Goths under Hermanaric had split away from the Visigoths just before 375, by which time their territory may have included Bessarabia. In 375 they fell under the thrall of the Huns and were dragged in their train in all the Hunnish expeditions whether south or west. Not until Attila's death did the Ostrogoths recover full independence. In the face of the lust for gold which was recognized as an outstanding trait of the Huns,[1] it is inconceivable that a subject tribe could have had the opportunity for indulging in such an outburst of fine craftsmanship for their own use.

Indeed, for the period in question (400–50) there might seem to be no one left but the Huns themselves, and that solution few would dare to advance. For whatever the date of the material, it follows in direct descent from a Gothic ancestry and can only have been the work of a people with the traditions of the old east European world behind them. There are then serious obstacles in the way of finding a people who were at once capable of producing such jewellery in the early fifth century and also in a position to do so.

In short, it is here suggested that the cultural period in which the jewellery was made must lie before the Hun incursion and that its products emanate from people who were in occupation in Dacia and Pannonia before that event, even if deposition, whether in graves or hoards, may have taken place a little—it can hardly have been much—later. This is, as mentioned earlier, the dating to which Salin evidently inclined.

To whom then is this jewellery to be attributed? As the map shows, most of it has been found either in eastern Hungary or in Pannonia inferior; that is, a strip west of the Danube from Esztergom down to the Drave and beyond into Sirmium. As regards the Banat, it is doubtful whether any exact information about the inhabitants in 375 is available, but records of an earlier time perhaps allow some inferences to be drawn.

In commenting on the statement of Jordanes mentioned earlier, Ludwig Schmidt notes that it lacks confirmation from any other historical source, but he clearly regards it as being worthy of every consideration. From it we learn that the Vandals who were attacked by Geberich were occupying an area 'iuxta flumina Marisia, Miliana, Gilpil et Grisia', the Maros and the White, Black, and Rapid Köros, three of its tributaries. This is one of the regions in which the large silver plate-brooches (*Blechfibeln*) are well represented. The other portion of eastern Hungary in which they occur lies in the upper basin of the Tisza in the neighbourhood of Nagy Várad (Grosswardein) and Szilágy Somlyó, and had been in Vandal hands since A.D. 171. It is known, moreover, that the Vandals in 275 came into conflict with Sarmatae and Visigoths in an attempt to extend their restricted territory in the Banat, especially after its evacuation by the Romans in 274.[1]

---

[1] Ammianus Marcellinus, xxxi, 11: '. . . auri cupidine immensa flagrantes'; Hieronymus, *Epp.* lxxvii, 8: 'ob nimiam auri cupiditatem.' Professor Thompson in his book, which did not appear until after this paper was written, contributes much valuable information in corroboration of this trait of the Huns. They, a nomadic people, unversed in almost all manufactures, required gold to purchase not only food but also gear of every kind, even weapons (see pp. 4, 57, 161, 170, and 193–4). Incidentally he quotes Sir Ellis Minns's opinion that 'he does not think the nomads worked metals. Metal work, if not all work, was for slaves, tributaries, and neighbours to supply.'

Jordanes's account of the episode in 335 expresses Geberich's purpose in attacking the Vandals as 'primitias regni sui mox in Vandalica gente extendere cupiens', to enlarge the small beginnings of his own kingdom, and describes the result as a thorough defeat of the Vandals in the field with subsequent harrying and plundering. It seems, however, that the Visigoths were in no position to oust the Vandals from their territory, for Jordanes's account ends by saying that after the victory Geberich 'ad propria loca, unde exierat, remeavit' ('returned to his own country whence he had come'). The whole account has all the atmosphere of a Highland clan raid on a large scale. Jordanes goes on to say that after their defeat the surviving Vandals sought permission from the emperor Constantine (Constantine I) to settle *in utraque Pannonia*, i.e. Pannonia superior and inferior west of the Danube, and that obtaining it they lived in tranquillity within the Empire for sixty years. But, if this is correct, it becomes difficult to harmonize the archaeological evidence, as the map will show. The jewellery found in Pannonia belongs to the same culture as that found in east Hungary, and has all the signs of being the product of one and the same people, who, it is permissible to suggest, were the Vandals. There is nothing to show that the Visigoths followed them up into Pannonia. It is hard indeed to see why the Vandals as a whole should have begged asylum from Constantine. The conflict was restricted to those living on the lower reaches of the Maros; it must apply to their survivors only.

Schmidt indeed suggests that possibly behind Jordanes's statement lies the expedition of the Goths against the Sarmatae Argaragantes in the Banat, who were, it is known, helped by Constantine and transplanted to Roman territory in 334. Is it possible that Jordanes (writing *c.* 550) has mingled two events? (1) a raid by Goths into the Banat in *c.* 334, and (2) a removal of Vandals to Pannonia, not due to fear of the Goths at all, but at a later date, like their old foes the Visigoths, under pressure from the Huns, to whom they declined to submit, as the Ostrogoths had done.

This seems to be the only reasonable explanation of a series of graves in Hungary east of the Tisza (the Sarmatae, not the Vandals, occupied the area between the Tisza and the Danube) and of others in Pannonia yielding relics of a culture which had reached the very high point expressed in brooches of types 1 and 2, and it means that these rich graves must belong to the period immediately before the Hun invasion, since there is nothing that can be shown to follow their contents in immediate sequence. In regard to Pannonia, graves containing these brooches have also been found at Untersiebenbrunn, near Vienna, and farther north at Laa an der Thaya. This second discovery consists of fine examples of large size; the first mentioned, a rich grave of a woman, with two horse-bits and some fine horse-trappings, contained four brooches, two jewelled examples of type 2, an unusual example of type 1, and a late specimen of the same type, on which comment will be made later. This is the grave-group which Åberg dated to *c*. 400, and appears to have made the starting-point of his chronology.

---

[1] L. Schmidt, *op. cit.*, p. 7; Dio Cassius, 71, 12.

The dating of the large *Blechfibel* advanced in the present thesis admittedly is confronted by a serious difficulty in Jordanes's account of Geberich's invasion of the Maros valley, if the date of that occurrence as usually accepted, *c*. 335, is correct. In that case it would hardly be possible for such brooches, especially if they are to be assigned to the Vandals, to have been buried in that area later than 335. Indeed, their initial date would have to be pushed back to an inacceptable point. As already remarked, doubts have been raised on various grounds about the entire credibility of the account,[1] but two aspects of the matter seem to have been less noticed.

Firstly, the date of Geberich himself. He is not otherwise mentioned except that he followed in succession to Ariarich and Arioch (*Anonym. Valesii* in Jordanes's *Getica*, 112). The former was the Visigothic king with whom Constantine the Great concluded a treaty after Constantine Caesar's victory in 332, while the latter is, according to Jordanes (*Getica*, 112), a co-ruler. It is not known when Ariarich died, nor how long Arioch continued, but, if there was a real succession of these three persons, there is no necessity to suppose that Geberich became king much before the middle of the fourth century, if as early, and the date of his raid on the Vandals may in reality be similarly advanced.

The second point lies in the beginning of Jordanes's story, in the words *primitias regni extendere cupiens*. Here is a strange word to meet in any account. *Primitiae*, which initially means 'first-fruits', came to mean 'first essays' or 'beginnings', the latter the translation used by C. Mierow.[2] But what a term to use in regard to a ruler of the Visigoths in the middle of the fourth century! That people had held Moldavia and Greater Wallachia for long enough, and had at least controlled most of Transylvania ever since the Romans evacuated it in 264. In 335, at any rate, there could be no question of an incipient kingdom. The simplest interpretation would seem to be that Geberich desired to signalize his accession by a raid on his tribe's bitter enemies, the Vandals. He ravaged, but apparently did not occupy, the country which lay north of the River Maros, and so of the northern boundary of the Banat, which had formed part of the province of Dacia under Roman rule. It is known that in 334 the Sarmatae Argaragantes living in the Banat were attacked by their vassals the Sarmatae Limigantes and forced to emigrate. In 358 Constantine II, after quelling disorder among the Iazyges, found a remnant of the Sarmatae Argaragantes (many having been previously given refuge in Thrace and Macedonia) in the neighbourhood of Budapest and repatriated them. Of them it is recorded that they had found refuge with the Victoali (Victovali), one of the Vandal clans.[3] Clearly Geberich left the rest of the Vandals in north-eastern Hungary in a position to spread southwards and refill the Maros region.[4]

---

[1] See also L. Schmidt, *Geschichte der deutschen Stämme*, i, 18.

[2] *The Gothic History of Jornandes* (Princeton, 1915), p. 83. Unfortunately the late Professor Alexander Souter did not cite this occurrence of the word in his Late Latin Glossary. His view on its meaning here would have been interesting.

[3] Carl Patsch, *Beiträge zur Völkerkunde von Südosteuropa*, iii, 137 f.

[4] Patsch, *op. cit.*, p. 38, evidently held the same view, since he notes the repatriated Sarmatae were, in 358, settled as *foederati*, but in numbers insufficient to cover a territory that had previously been thickly populated. He adds that he considers it highly probable that at that period the

This would certainly have been possible, especially later, when the Visigoths were fully employed in meeting the activities of Valens when he reoccupied the north bank of the Danube after 369, compelling the Visigoths to retire into the heart of Transylvanian Dacia.

That not all the Vandals left eastern Hungary in 335 is certain. The archaeological evidence alone suffices to prove this; the jewellery under consideration belongs to the latest stage of its class as it appears in the Danubian region. That being so, it also goes to prove that the Vandals remained numerous and powerful enough in that region to enable them to occupy the Maros valleys once more, for there several of the finest examples of type 1 have come to light. It is a question whether it was all made before the Hun invasion in 375, or whether the Vandals remained sufficiently undisturbed by that event to maintain and develop their culture in the last quarter of the fourth century. The answer seems to be that the first alternative may be the more correct.

About 400, according to Procopius (i, 3, 1), the Asding branch of the Vandals began to seek a new home. The compelling force behind their action is said to have been famine, since the land was not sufficient to support the whole tribe or people.[1] So in 401 a large body began a westward trek towards Raetia and Noricum with a more distant goal in view. But there for the moment their movement was halted by Stilicho, and not until 406 did they set out once more, in company with Alans, Quadi (Suevi), and a host of the Silingi, the other branch of the Vandals from Silesia. They hardly halted by the way, and after a rather serious check from Frankish opposition on the right bank of the Rhine, in which the Asdingi suffered severe losses in men, this huge migrating company crossed the Rhine, possibly near Mainz on the last day of the year, and proceeded to harry and plunder widely in eastern and north-eastern Gaul. They remained in Gaul for three years, but by 409 they had reached the Pyrenees, and after a temporary check, which they used to harry southern Gaul, they crossed the Pyrenees into Spain.

The greater part of their stay in Gaul was evidently spent in the north, for it is in that region that examples of the brooch-types 1 and 2 appear again, though signs of change are observable. One or more specimens of type 1 are cast, not beaten from sheet-metal;[2] but even so they retain the same shape and are similarly ornamented.

---

friendlily disposed Victovali from northern Hungary were transplanted thither as the first *German* (i.e. as contrasted with Sarmatian) peoples in the Banat.

[1] In the passage mentioned the Vandals in question are described as living round Lake Maiotis, adjoining the Crimea. Little warrant seems to exist for any Vandal settlements in that quarter, though it could be true of Alans, who, in 332, as Jordanes states, along with Vandals (L. Schmidt, *op. cit.*, p. 12) obtained imperial permission to settle in Pannonia. By 400 it may well be that Pannonia, too, was becoming severely overcrowded owing to other retreats from the advancing Huns.

[2] A word of caution is necessary in regard to the term *Blechfibel* by which type 1 is generally known to continental archaeologists. Primarily it has a technical significance, but later it is loosely used to denote a class in which the general form is preserved without distinction as to whether the ornamental apron covering the mechanical part of its structure is hammered from sheet-metal or is cast, an important difference, where the name *Blechfibel* can become a misnomer and misleading.

One consideration must also be borne in mind. The form of type 1 is technically simple, and, so long as it was produced by hammering with a keel running down the foot was incapable of any great development except in point of size. As Beninger has well put it, its form is *starr und unbeweglich*—stiff and immobile. Appliques, as at Nagy Várad, were almost the only possible addition, and even in these there is an extraordinary conservatism, best illustrated by the acanthus frill at each end of the bow. Engraving or punching seems hardly, or never, to have been practised. The type cannot have had a very long life; 150 years seems a fair estimate. Zeiss, however, talks of 250 years, a figure which seriously over-estimates its possibilities, if one starts from the early evolutionary stages as seen at Marosszentanna.

They are, generally speaking, as large as the Danubian pieces; one from Marchélepot, Somme, measures 9 in. in length. Along with these appear one or two of the jewelled type 2, one the often cited example from Airan, Normandy, dating back possibly to 350.

Here, too, appears a new class, type 3 (fig. 4, 5–7), decorated in a style resembling chip-carving, but which, as L. von Martón maintained in another connexion, is more probably a translation in casting-work of the metal-worker's punch.[1] On brooches the style is hardly known in the Danubian area, except on the pillars which sustain the axes of the spring-coil, and in appliques on one pair of brooches from Nagy Várad (fig. 2, 9). The style is, however, found on buckles and other fittings, and apparently was coming gradually into vogue when the migration began.

An interesting point in support of von Martón's technical contention is the fact that the brooches of this type found in western Europe are built up of an overlay in *Keilschnitt* style in gold or silver on a basis of bronze or even iron. Their structure is therefore quite comparable to that of brooches of type 2 with their gold overlay on a silver foundation. Without in any way insisting on it, the general impression they have made upon the present writer is that they are definitely somewhat later than either types 1 or 2; that their origin lies rather to the west than to the east of the Danube under a deep-rooted romanized culture; and consequently that they are possibly to be assigned to another element, Suevi or other tribe, in the great migrating horde.

There seems to be no reason to suggest that anyone but the Vandals and their allies imported these brooches and other gear deriving from the same culture into Gaul. Åberg realized that ascription of the northern French group to the Visigoths is impossible, but assigned them to racial elements belonging to a Gothic cultural group, who he suggests wandered into northern Gaul, unnoticed by history, at a date somewhat earlier than the Visigothic invasion of southern Gaul in 412. Why not then recognize the Vandals and their allies as responsible? For in their homeland they could easily have come under the stream of Gothic influences which poured out from south Russia during the third and fourth centuries?

Indeed, in so far as Gaul is concerned, the Visigoths can be entirely discounted. Even in Italy all that is claimed for them consists of two brooches of type 1, very moderate in size (fig. 3, 2–3); in Gaul two or three quite small cast imitations are all that might be placed to their credit, and that with no certainty (fig. 3, 8).

The Visigoths did not enter Gaul until 412; the Vandals and their allies had passed into Spain three years earlier. Not until 416 was Ataulf compelled by Constantius to lead his Visigoths into Spain. There he and his successor Wallia had some success against the Vandals driving the Asdingi into Galicia. At the end of 418 the Visigoths were recalled to Gaul and settled in Aquitaine; not until after 450 did they pass once more into Spain to lay there the foundations of the Visigothic Kingdom.[2]

---

[1] *Prähistorische Zeitschrift*, 1912, p. 157.

[2] How great a tribe the Vandals must have been is shown by their constant participation in raids across the Danube in pre-Hun days, by their association with Radagaisus's expedition into Italy in 403, and by their loss, according to Jordanes, of 20,000 men (a figure probably greatly exaggerated) in their clash with the Franks in 406. In spite of that they were able to raid Gaul and after 409 to penetrate the Iberian peninsula almost at once as deep as into Andalucia. And finally, even after quarrels with their allies and conflicts with Visigoths, to cross over into north Africa in 425, and from there to harry the Roman Empire for twenty-five years. On the question of numbers in general recorded by the various chroniclers L. Schmidt has some valuable comments in his *Geschichte der deutschen Stämme*, i, 45–6.

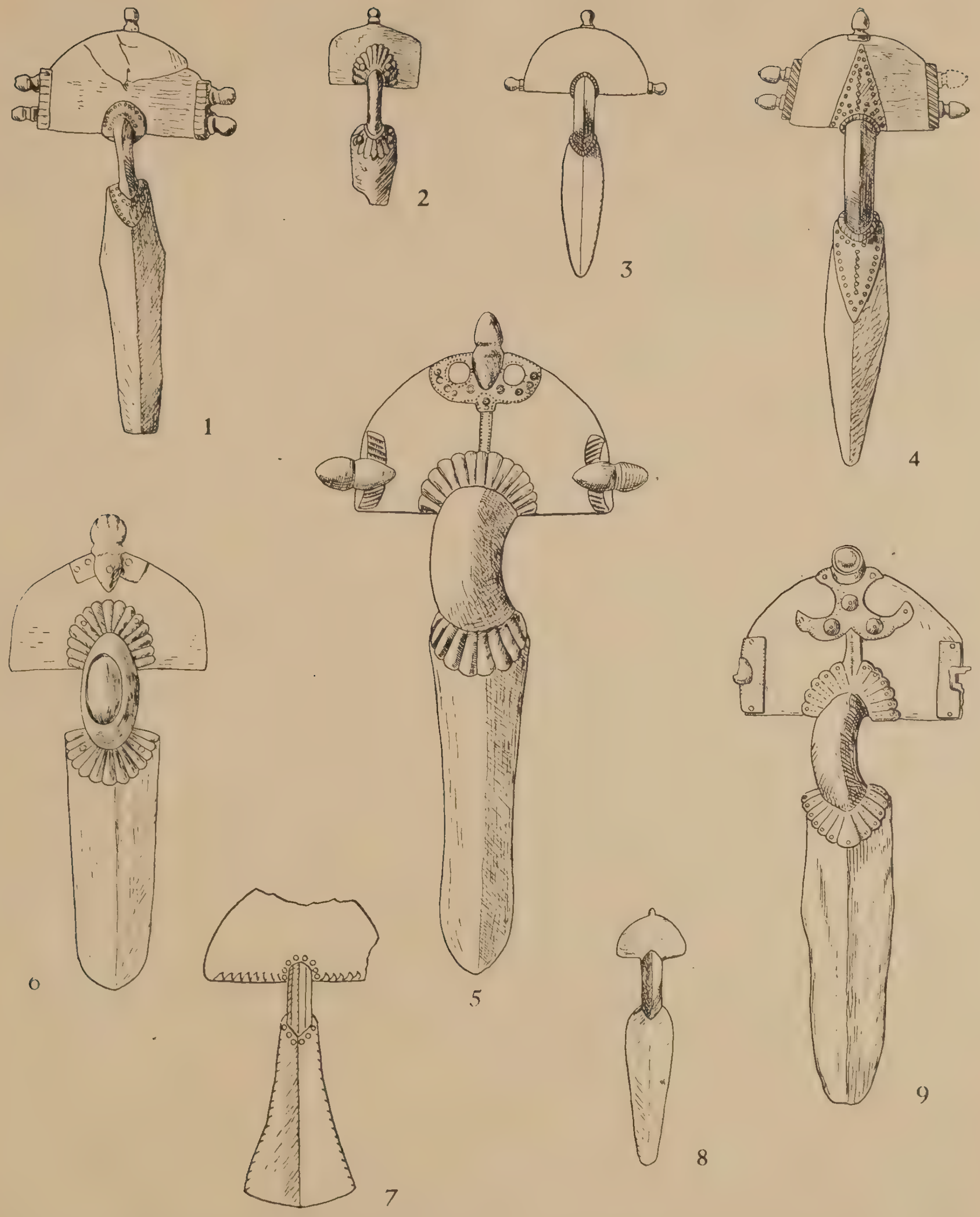


Fig. 3. Brooches of type 1 from Italy and France. 1. Strasbourg. 2. Brescia. 3. Villafontana. 4. Balleure. 5. Marchélepot. 6. Chassemy. 7. Cholet. 8. Herpes. 9. Arcy Ste-Restitue. (½)

And yet, among the numerous relics of Germanic culture found in the peninsula only a few objects, such as a gold buckle with garnet cloisons like one found at Untersiebenbrunn, are all that Zeiss[1] attributes to the earlier occupation by the Vandals and others. The former, by 425, had been there long enough to have had and left behind them in graves or otherwise some material culture of their own, clear evidence of that being *Blechfibeln* figured by Zeiss on his pl. I, e.g. here fig. 4, 1–4. Those, the provenience of which is known, come from the province of Soria (in north-central Spain) or from near Toledo, and can perfectly well have belonged to the Vandals. They are all, like that from Chassemy,[2] cast, not hammered; they are of bronze, not of silver, and exhibit the same signs of deterioration in form. The last expression of the type is a pair of brooches from the province of Soria[3] (fig. 4, 4) in bronze, cast with sunken panel on the head-plate and with small excrescences at each angle of the foot-plate. More than these may be pre-Visigothic, but lie outside the compass of this paper.

Only thus can this widely diffused material from Hungary to Spain be brought into full harmony with the march of historical events. It matters not a jot whether individual pieces in the West are assigned to Vandals,[4] Alans, Suevi, or Sarmatae; it was the great migration in which they shared that first made known to western Europe the rich culture born on the shores of the Black Sea.[5] Only thus can a satisfactory dating be determined.

Brenner's main thesis was right; he erred in his conclusions. He should have gone behind the Hun invasion for the correct solution of the problem. The final proof of that lies in an objective survey of the whole mass of comparable material between A.D. 300 and 500. The fourth century saw an outburst of fine gold and silversmith's work which by 375 had reached a very high level. The great 2nd hoard from Szilágy Somlyó, the grave at Untersiebenbrunn, and the material employed to illustrate this paper, all mark the summit of an unbroken line of development. What follows then? It can be clearly demonstrated from Åberg's useful book. Take the material there surveyed under figs. 53–74 and compare it with that reviewed under figs. 83–91. They both derived ultimately from the Pontic region, but what a world of difference! The first group exhibits a high quality of workmanship, a fine and restrained taste; the second has all the appearance of rather tawdry and cheap mass-production. Between them is a gulf not only of quality, but of time. For a break there surely is, or perhaps a slump, during which amid the disturbance caused by the years of Hun occupation the old and new were held together by the slenderest threads, of which the excrescent roundels on brooches like the fourth piece from Untersiebenbrunn[6] and that from Soria mentioned above are small, but important indications, a portent of an all-pervading style in the post-Hun epoch.[7]

---

[1] *Op. cit.* 31–2, pl. 7, 3.

[2] *Album Caranda*, pl. 95, nouv. serie, fig. I.

[3] Zeiss, *op. cit.*, pl. II, I and 2.

[4] Vandal is used throughout this paper for brevity, but all the partners are held in mind.

[5] That this type of jewellery, worn by the women-folk of the invading host, left little impression in Gaul is not surprising when one considers the conditions under which it was introduced and the shortness of the wearers' stay there.

[6] W. Kubitschek, *Jahrbuch für Altertumskunde*, V, 32, pl. II, fig. 5. It is to be noted that an advanced date for this brooch is demanded by the absence of the median ridge on the foot which characterizes the true *Blechfibel*. Its date is certainly later than *c.* 400, where Åberg places the grave, the jewellery from which covers a long period.

[7] It is to be seen on the huge example of type 3 from Flamicourt, Somme (*Bull. archéol.*, 1895, p. 94, pl. XXII, 5) here fig. 4, 7.

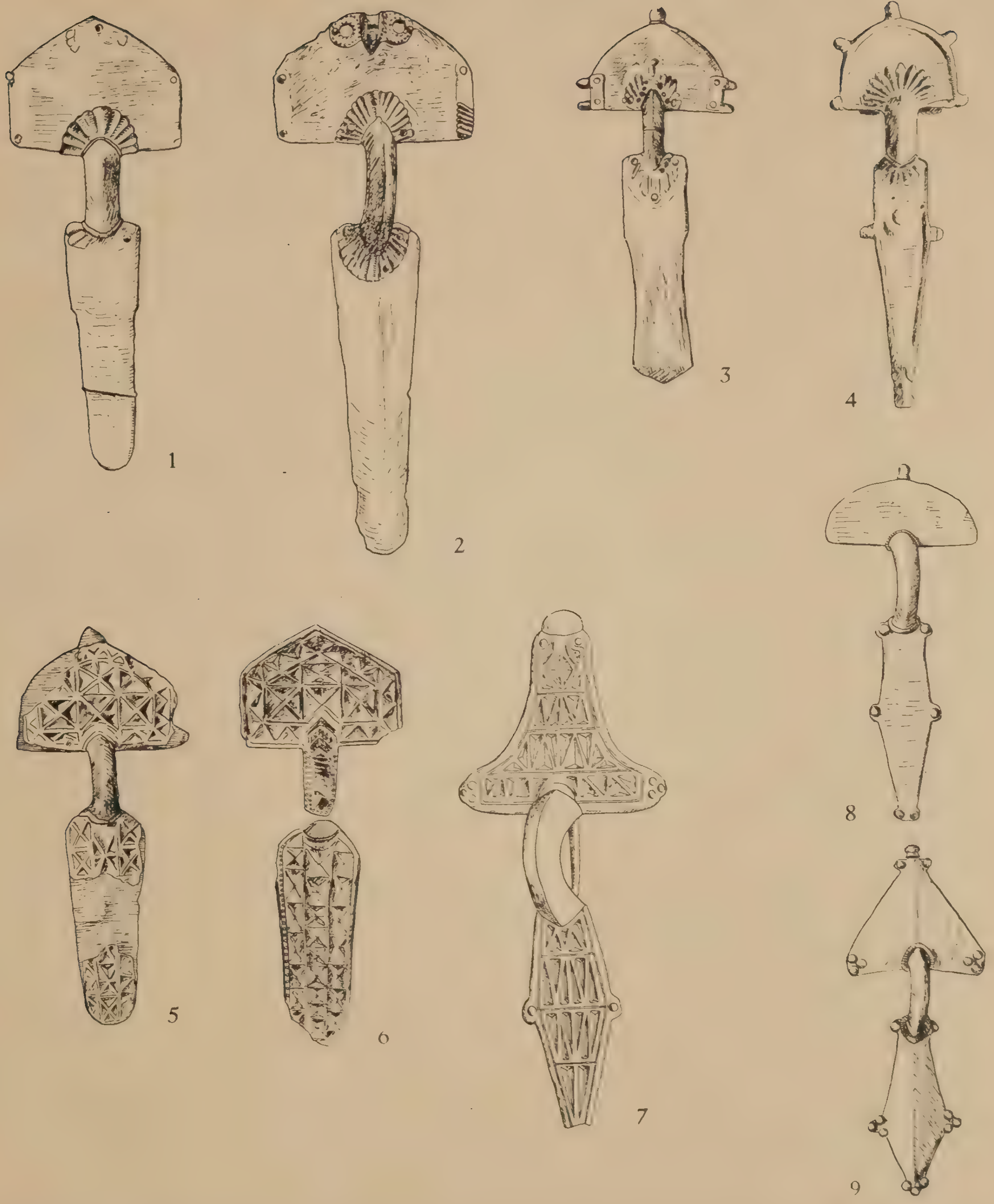


Fig. 4. Brooches of type 1 from Spain: 1 and 3, Spain; 2. Termes, Soria. Brooches of type 3 from Germany and France: 5. Kärlich; 6. Bretzenheim; 7. Flamicourt; 8–9. Untersiebenbrunn. Brooches of type 4 from Spain and Austria; 4. Deza, Soria. (½)

What then of the interval? It is then that such tribes as remained in central Europe, temporarily debarred from full intercourse with the east, evolved a fresh, limited style in which one marked feature is geometrical or scroll-pattern sometimes executed in chip-carving style,[1] and another is the beginnings of the later cloison style as it appears, for example, at Gültingen,[2] Wurtemberg, or in the grave of Childeric (*ob.* 480), with a future unchecked before it allowing it to reach such heights as Sutton Hoo.

In short, the century and a half between 350 and 500 saw the results of two distinct surges of cultural influence emanating from south Russia, the first caused by actual migration, the latter a resumption of intercourse and trade after the shadow of the Huns had passed.

It is really remarkable how minor was the role played by the Visigoths in the culture of the Migration period. After 376, when they crossed the Danube into the confines of the Roman Empire, nowhere in that area is there any distinctive material which can be placed to their credit until they finally established a new kingdom in the Iberian peninsula. There, until the production of the Guarrazar gold crowns in the seventh century, their products in the matter of jewellery as illustrated by Zeiss's plates stand artistically and technically at a low level. From 376 to 450 they destroyed more than they created.

It is strange to note during this period the different regard in which the Visigoths seem to have been held as compared with the other barbarians. That some such distinction did exist is obvious. What is less so is the reason that lies behind. Why, with the available knowledge before him, should St. Jerome in 396 have written to Heliodorus in these words:[3]—'Horret animum temporum nostrorum ruinas persequi. Viginti et eo amplius anni sunt quod inter Constantinopolem et alpes Julias quotidie Romanus sanguis effunditur: Scythiam, Thraciam, Macedoniam, Pannoniam, Daciam, Thessaliam, Achaiam, Sarmata, Quadus, Alanus, Hunni, Vandali, Marcomanni vastant, trahunt, rapiunt'—making no mention of the Goths at all? Presumably because in spite of Arian side-slipping some of them were Christian.

To sum up:

Date. If the arguments already advanced are tenable, the period, to which types 1 and 2 can be assigned, must end by A.D. 400, even if the large silver brooches of the Danubian region may not date as far back as 350.

Type 3, as its distribution indicates, belongs in the main to the migration (post-406) period; it certainly colours much of the later work in Spain.

The seeds of type 4 can be traced well back into the fourth century, but they did not come to full flower until the close of the fifth.

Attribution. On the assumption that the above dating is correct, the question of attribution becomes important. Let it be said here that type 2 is essentially a regal jewellery and may have been in vogue among any of the ruling chiefs. Type 1 is, on the other hand, that of the well-to-do members of a *settled* folk.

(i) Visigoths, to whom Hampel, Åberg, Beninger, and others assign the more important types, along with the Szilágy Somlyó hoards, were as a tribe long established in Dacia, but mainly in Moldavia and Greater Wallachia. But, though they may have defeated the Vandals in the Maros region, subsequent occupation of that region by them seems to be refuted by the texts. In any case no Visigoths joined the northerly migration to Pannonia or eventually to Gaul, for the majority under Fritigern crossed the Danube into the Balkans in 376.

---

[1] e.g. Rouise, Syrmium (Åberg, *op. cit.*, fig. 78), Gáva, Hungary, *ibid.*, fig. 79, Úherce, Bohemia, *ibid.*, fig. 18.

[2] *Ibid.*, fig. 101.

[3] Migne, *Patr. Lat.* 22, 600.

(ii) Ostrogoths—they came immediately under the domination of the Huns, and certainly did not go to Gaul in 406.

(iii) Alans—they have a good claim in one respect; they came originally from south Russia and they constituted an important element in the migration, but they were never settled in Hungary, east of the Danube.

(iv) Sarmatae—they contributed a contingent to the expedition, not a large one considering what the tribe had suffered in the preceding century. Examples of *Blechfibeln* are recorded from their starting-point in the Banat, but these may well be an overspill from the denser distribution north of the River Maros, particularly so in view of the friendly relations between Vandals and Sarmatae mentioned above (p. 204).

(v) Gepidae—their place of settlement on the northern fringe of Dacia gives them a better claim. Indeed C. Diculescu (*Die Gepiden*, i) assigns most of the principal part of the material on which this paper is based to this people. But again there is no proof that they occupied large portions of Hungary, east of the Tisza, or that they were ever settled in Pannonia. Moreover, Diculescu admits (*op. cit.*, p. 46) that the Gepidae who joined the expedition to Gaul were no more than a splinter-group (*Bruchteil*), as the subsequent history of the tribe clearly proves.

(vi) There remain the Vandals, who, as I have endeavoured to show, fulfil almost every condition necessary to establish their prior claim on all counts. For, even if the reservation in regard to type 2 be admitted, distribution here also favours the Vandals. Not only have examples been found along the line of migration from Hungary to France, but by far the largest find of the type, seventeen specimens in both early and late varieties, comes from Szilágy Somlyó in north-east Hungary. In addition a pair are known from the Kiev region where the Vandals were settled for a time.[1] Finally, examples dated to the early fourth century, in gold, but without jewels come from Sakrau in Silesia, which was the homeland of the Vandals, and which, as there is evidence to prove, some portion of the Silingi still occupied in the fifth century. Earlier I have indicated how weak is the claim for a Visigothic introduction of type 1 into France by way of Italy. Equally weak is it for type 2, if it is to be based on a pair, only a fraction over 3 in. in length, reputed to have been found at Lago di Varese, north Italy.[2]

It is to be remarked that there appears to be no lack of archaeological material attributable to the Vandals in their Silesian homeland. L. Schmidt cites many references to German literature, and, following the gradual southwardly shift of the Vandals, accepts attribution of third-century chieftain-graves like those at Ostrópataka and Czéke-Cejkor in the Marmaros basin to the Vandals, citing Beninger as his authority. In the face of this admission of a Vandal culture it is strange that, so far as I am aware, no attempt appears to have been made to follow up the progress of that culture into the fourth and fifth centuries. It would be absurd to suppose that it did not exist.

---

[1] The stress which should be laid upon the term *settled* cannot here be too strongly emphasized. It may seem difficult, almost paradoxical, to use the word settled at all in reference to the areas north of the Danube in the fourth century. Regarded, however, in their proper aspect, many of the quarrels and disturbances among the barbarian tribes have little more significance relatively speaking than the outbursts of temper or hunger that, in the Middle Ages, gave rise to mutual attacks north and south of the Scottish border. In neither case had they the devastating, deracinating effect of the Hun invasion. Amid them the tribes must have enjoyed some settled life; Roman subsidies or douceurs must have kept many a tribal exchequer well-filled. There cannot be the least doubt that a reasonably settled life was possible and did exist. The women's graves, from which the large *Blechfibeln* come, are the abundant proof of it.

[2] A. von Jenny, *Germanischer Schmuck*, 40, pl. 15, 1–2.

While not prepared to deny that this jewellery originated in south Russia or that to that extent it may be termed Gothic, I find it difficult to associate it specifically with the Visigoths, since the Crimea, where the *Blechfibel* is well known, was, it appears, outside the Visigothic area. It seems strange, therefore, to find Åberg writing of the younger types of *Blechfibel* as having been carried by the Visigoths to the Danube lands, to Italy and Gaul, and further that their date (*c.* 400) is confirmed by historical events, specifically the Visigothic march to Italy and Gaul.[1]

Åberg's evidence for this is in addition to the two examples from Italy, and the doubtful attribution of the Spanish examples to the Visigothic occupation, one miserable little imitation from the Frankish cemetery at Herpes, Charente (fig. 3, 8). Its value can be best assessed by reference to pl. XIV of the British Museum, *Guide to the Anglo-Saxon Antiquities*, fig. 12, where it figures very feebly even by comparison with well-documented sixth-century brooches of modest size.

Salin long ago evaluated the evidence more correctly, when in his *Altgermanischer Thierornamentik* (p. 139) he writes:

> The area of distribution of the older objects within the south Germanic stream, for example the *Blechfibeln* with double spring-coils, does not correspond with any of the migrations mentioned by history. Since we find them in the vicinity of Strasbourg, in the department of Sâone-et-Loire and further in Normandy, and only very degenerate examples in southern France, it appears to follow that they are due to a stream which moved forward north of the Alps.

A Visigothic claim that rests upon such poor specimens as those from southern France cannot be regarded as having any substance.

Salin does not connect the brooches with the migration of 406, possibly because he deemed that period to be too late, for in his final summing up of the evidence for arriving at a chronology of zoomorphic ornament (*op. cit.*, p. 355) he expressly mentions the *Blechfibel*, and, using the example from Kalisz, Poland (fig. 2, 5), places it, as noted at the beginning of this paper, about the middle of the fourth century, 'rather before than after'. Perhaps that is going a little too far back in time for that particular piece—350–75 would in my view be more probable. Nevertheless, however much one may question some points and conclusions in Salin's main thesis, the foundations upon which he built were well and truly laid.

[1] *Den Nordiska Folkvandringstidens Kronologi.*

INDEX TO VOLUME XCIV

Aberystwyth Castle (Cardiganshire), 23.
Abraha, Abyssinian Commander, Church of Sanʿā' built by, 101; march on Mekka, 101.
Abyssinia, building technique, 99–102; relations with Arabia before Islam, 101.
à Court Repington, C. H. W., owner of Henley aeolipile, 38.
Adam, abt. of Dore, *Pictor in Carmine* ascribed to, 143, 144.
Aeolipiles as fire-blowers, 27–55; derivation of name, 27; dwarfish shape of, 45–6; 16th-century earthenware example, 29; in the form of negroes' heads, 48–9.
  British Museum, 29 *n.* Henley (formerly at Tamworth), 29 *n.*, 36, 38–9, 41, 42, 45, 46. Himalayan examples, 29, 30, 41, 51–2. Jack of Hilton, 33, 35–8, 44, 45, 46. Novomoskovsk, 43, 47. Siddinghausen, 43–4. Society of Antiquaries (from canal at Basingstoke), 29 *n.*, 33, 36, 39–40, 41, 42, 44, 45, 46. Sondershausen (known as the Püstrich), 31–5, 36, 44, 46, 55. Vienna, 42–3, 47.
Afilas, King of Abyssinia, Arabia invaded by, 101.
Airan (Normandy), 'Gothic' brooch from, 206.
Ajlun (Palestine), defences of castle, 63.
Aksum (Ethiopia), monolithic stelae of, 101.
Al-Adil, Sultan (Saphadin): reconstruction of defences of Damascus by, 61; inscriptions of, 63, 71, 74, 75, 83, 86, 87.
Alans, migrations of, 205, 208, 211.
Albertus Magnus, on aeolipiles, cited, 33–4, 40, 44, 45, 55.
Aleppo (Syria), Citadel: artillery tower, 76; double parapets, 74 *n.*; Great Gate, 72 *n.*, 77, 86; gateway shrine, 79.
Animal remains, list of those found at Risga, Argyll, 116.
an-Nasir Muhammad I, inscription of, 75 *n.*, 77.
an-Nasir Muhammad II, inscription of, 75.
Antichrist, The Coming of, used as type in *Pictor in Carmine* with companion scenes from the Old Testament (cxxxiv), 166.
Antiquaries, Society of: *see under* Aeolipiles.
Antler tools of Baltic type from Stirling region, 106.
Apostles, The Twelve: used as type in *Pictor in Carmine* with companion types from the Old Testament (xlvii), 156; Calling of (xxxiv–xxxv, xlv–xlvi), 155, 156; Mission of (l), 157; Pentecost (cxvii), 163; Speaking with tongues (cxviii), 164; Conversions by, (cxix), 164; Accused of preaching the Faith (cxx), 164; Flagellation of (cxxi), 164; Laying on of hands (cxxv), 165; Decision that the uncircumcised may receive the Holy Ghost (cxxix), 165.
Arabia, relations with Abyssinia, 101.
Arcy Ste-Restitue (Yonne), 'Gothic' brooch from, 207.
Ardnamurchan (Argyll), flint implements from, 113, 114.
Arjawash, governor of Damascus, 74.
Atholl, Dukes of, *see* Murray.
'Atlit (Palestine), double gate at Pilgrims' Castle, 85.
Augustus Caesar, Taxation of Roman Empire decreed by, used as type in *Pictor in Carmine* and companion scenes from the Old Testament (vi), 152.
Averlino, Antonio, fire-dogs and aeolipiles described by, 47.
Azraqī, on rebuilding the Kaʿba, cited, 97, 98.

Ba'albek (Syria), Citadel of, 59, 72 *n.*, 73, 74 *n.*, 79, 91.
Baghdad (Irak), double-parapets on Talisman Gate, 74 *n.*
Balestra, Antonio, painting of St. Oswald by, 168.
Ballacurry (I. of Man), Civil War earthworks at, 17.
Ballantrae (Ayrshire), 'fish-tail' scraper from, 112, 117 *n.*, 118; microliths from, 132.
Balleure (France), 'Gothic' brooch from, 207.
Bāqūm, name identified as Abyssinian form of Habakkuk, 102; carpenter employed on rebuilding the Kaʿba, 98, 102.
Barquq, Sultan, inscription of, 78.
Basingstoke (Hants), aeolipile found in canal at, 39, 41; *see* Society of Antiquaries *under* Aeolipiles.
Bassano (Venetia), picture of St. Oswald in church of S. Vito, 183.
Beaumaris Castle (Anglesey), 23.
Bec, Antony de, Bp. of Durham, I. of Man in possession of, 7.
Bedollo (Tyrol), church of St. Oswald at, 182.
Bell, Dr. William, on aeolipiles, cited, 33.
Bells, dedicated to St. Oswald, 182, 183.
Bellunello, Andrea, altar-piece at Forni by, 177.
Bergamo (Lombardy), Accademia Carrara, sketch by Tiepolo for picture of St. Oswald in, 170.
Bergues (Pas de Calais), cult of St. Oswald at, 193.
Berlin, metal bust in von Kaufmann Collection, 49.
Bernard, St., passage from *Apologia* addressed to William, abt. of St. Thierry, quoted, 145.
Bernardus Morlanensis, named as author of *Pictor in Carmine*, 144.
Birds, list of remains of aquatic birds found at Risga, Argyll, 116.
Bologna (Italy), picture of St. Oswald in church of S. Maria Incoronata, 173.
Bone implements, Obanian, in Argyll, 107.
Bonifazio Veronese, picture of St. Louis of France wrongly described as of St. Oswald, 169–70.
Bozen (Tyrol), church of St. Johann im Dorf, 186; St. Oswald's church, wall-paintings in, 185–6; church of St. Oswald at Gries, 186; frescoes at church of St. Vigil; 189, 190.
Bradford (Yorks.), ancient custom associated with rental procedure, 38.
Branca, Giovanni, aeolipile illustrated by, 50.
Brescia (Italy), 'Gothic' brooch from, 207.
Bretzenheim (Germany), 'Gothic' brooch from, 209.
Brine, Thomas, architect, employed at Rushen Castle, 19.
British Museum: aeolipile in, 29 *n.*; copper bust aeolipile in, 49; Roman statuettes of dwarfs in, 45; medieval earthenware and glass vessels of Islamic origin, 52–3.

Brixen (Tyrol): chapel of St. Oswald above porch of church at, 185; 12th-century calendar of, 190; 15th-century MS. Life of St. Oswald at, 192.
Bronze Age remains: at Sanna Bay and Cul-na Croise, 128–30; at Drynan Bay, 132; at Coll, Kerrera, and Colonsay, 134–6; in Skye, 136; S. Uist, 136.
Brooches:
  'Blechfibel', 195–6, 202, 204, 205 *n.*, 208, 211, 212; dating of, 204.
  Chip-carving decoration, 196, 206, 210.
  'Gothic', of early migration period, 195–212; attribution of, 200, 202, 210; date of, 200–2, 208, 210; distribution of, 198, 200, 202.
Broughty Ferry (Forfar), flints from, 107.
Bruach na Maorach, *see* Kentra Bay.
Buxton, D. R., on churches of Ethiopia, cited, 100.
Bybars, Sultan, inscriptions of, 66 (Krak), 70 (Damascus), 74, 75.

Caernarvon Castle (Caernarvonshire): building round obsolete fortification at, 63 *n.*; shouldered lintels used at, 10.
'Caernarvon' lintelled heads, used for doorways at Castle Rushen, 6, 10.
Caerphilly Castle (Glamorganshire), 23.
Cairo (Egypt), defences of citadel, 63, 74 *n.*, 77 *n.*; Burg Kerkyalan, 91.
Cambridge (Cambs.): copies of *Pictor in Carmine* at, 143.
  Museum of Archaeology and Ethnology, aeolipiles in, 51.
Campbeltown (Argyll), type of scraper from Albyn Distillery, 112.
Candelpergher, Oswald, church at Rovereto built by, 181–2.
Canterbury Cathedral (Kent), series of types used for artistic purposes at, 146; cycle of subjects used in glass of twelve windows at, 148–50; David feigning madness and 'walking on his hands' represented at, 148, 149.
Carsaig (Mull), flint beds at, 117.
Cartigliano (Venetia), cult of St. Oswald in church of SS. Simon and Jude, 183–4.
Castle Rushen (I. of Man): 1–26; acknowledgements, 26; Cistercian abbey at, 2; held against Parliament and finally surrendered during Civil War, 16; domestic arrangements, 24; early fortifications, 22–4; 16th-century fortifications, 25–6; Civil War fortifications, 17; transformed into a prison in 18th century, 18–19.
  Ashlar used in, 21; bell on tower, 21; 'Caernarvon' lintels, 6, 10; portcullises, 10, 23; turning-bridge, 23; vaults, barrel, 8; vaults, ribbed, 6, 8.
  Barbican, 12, 14, 15–16; heightening of, 17. Bastion, 16. Chapel, 18; *see also under* Keep *below*. Curtain, 13. Derby House, 12, 15, 16, 17, 18, 21; date of building, 17. Drawbridge, 11. Gatehouse, Outer, 11–12, 13. Glacis, 14, 25. Keep: 2–13; heightening of, 13, 17; bellcote, 11; chapel, 3, 13, 24; gatehouse, 3, 7. Museum, stone from Derby House with date 1644 in, 17. Towers, 14.
Champlat, Boujaucourt (Aisne), *tranchets* on flakes from, 112.
Chassemy (France), 'Gothic' brooch from, 207.
Childeric, jewellery from grave of, 210.
Cholet (Maine-et Loire), 'Gothic' brooch from, 207.
Christ, scenes from the Life and Passion of:
  cycle of scenes used in glass at Canterbury, 148–50; on retable at Klosterneuburg, 150; used in *Pictor in Carmine* and with companion scenes drawn from the Old Testament and other sources; Nativity (viii), 152. Angel appears to shepherds (ix), 152. Adoration by the shepherds (x), 152. Circumcision and naming of the Child Jesus (xii), 152. Star appears to the Magi (xi), 152. Magi, departing from Herod, follow the star (xiii), 152. Adoration by the Magi (xiv), 153. Magi warned against returning to Herod (xv), 153. Jesus Blessed by Simeon (xvi), 153. Joseph warned in a dream (xvii), 153. Flight into Egypt (xviii), 153. Massacre of the Innocents (xix), 153. After Herod's death, Joseph told in a dream to return to Israel (xx), 153. Return to Nazareth (xxi), 153. With the doctors in the Temple (xxii), 153. Childhood, subject to His parents (xxiii), 153. Baptism (xxvi, xxvii), 154. Forty days in the Wilderness (xxix), 154. Temptation (xxx–xxxii), 154–5. Withdrawal of Satan; angels minister to Christ (xxxiii), 155. Reads from Book of Isaiah in the Synagogue (xli), 156. Call to the disciples (xxxiv–xxxv, xlv–xlvi), 155, 156. Water turned into wine at Cana (xxxvi), 155. Begins His ministry (xxxvii), 155. Cleansing of the Temple (xxxviii), 155. Discourse with Nicodemus (xxxix), 155. Woman of Samaria (lvi), 157. Miraculous draught of fishes (xl), 155. Healing of a leper (li), 157. Healing man with withered hand (lxii), 158. Sermon on the Mount (xlix), 157. Raising son of widow of Nain (lii), 157. Roused to calm the storm (liii), 157. Gergasene demoniacs (liv), 157. Gadarene Swine (lv), 157. In house of Levi with publicans and sinners (lvii), 157. Raising of [Jairus] daughter in house of her parents (lviii), 157. Mission of the Apostles (l), 157. Baptism by the Apostles (xlviii), 156. In the house of Martha and Mary (lx), 158. Mission of the Seventy (lxi), 158. About to be cast down—He passed through the midst of them (lxiii), 158. Feeding of Five Thousand (lxvi), 158. Galileans' blood mingled by Pilate with their sacrifices (lxvii), 158. Tower of Siloam (lxviii), 158. Defended by Nicodemus (lxix), 158. Woman taken in adultery (lxx), 158. 'I am the Light of the World' (lxxi), 159. Healing the blind man (lxxiii), 159. Cursing the fig-tree (lxxxii), 159. Threatened with stoning (lxxii), 159. Weeps at Lazarus's grave (lxxiv), 159. Raising of Lazarus (lxxv), 159. Rejected by Samaritans (lxxvi), 159. Request of mother of James and John (lxxvii), 159. Weeping over Jerusalem (lxxx), 159. Anointed by Mary Magdalen (lix), 158. Two disciples sent to find an ass and a foal (lxxviii), 159. Entry into Jerusalem (lxxix), 159. Tempted by Pharisees: tribute money (lxxxiv), 160. Widow's mite (lxxxi), 159. Preaching (lxxxiii), 160. On Mount of Olives

(lxxxviii), 160. Washes disciples' feet (lxxxvi), 160. Last Supper, 147, 148 (Canterbury) (lxxxvii), 160. Kiss of Judas (lxxxix), 160. Betrayal by Judas (lxxxv), 160. Peter smites Malchus (xc), 160. Delivered to the Jews (xci), 160. Bound by the Jews (xcii), 160. Flight of the young man (xciii), 160. Led before Annas (xciv), 161. Mocking of (cii), 162. Falsely accused (xcv), 161. Judas hangs himself (xcvi), 161. Flagellation (xcvii), 161. Crowned with thorns (xcviii), 161. Bearing the Cross (xcix), 161. 'Daughters of Jerusalem, weep not for me' (c), 161. Crucifixion (ci); 161. 'Father, forgive them' (civ), 162. Piercing of His side (cv), 162. Commends St. Mary to St. John (ciii), 162. Rending of the veil (cvi), 162. Opening of tomb and Resurrection of the Dead (cvii), 162. Harrowing of Hell (cviii), 162. Burial by Joseph and Nicodemus (cix), 162. Resurrection (cx), 163. Appearances after Resurrection, 'Peace be unto you' (cxi), 163; 'Receive ye the Holy Ghost' (cxii), 163; Eating honeycomb and fish (cxiii), 163; Appearance to St. Peter, 'Feed my sheep' (cxiv), 163. Ascension (cxv), 163. Seated in Judgement (cxxxviii), 166.
Chur (Switzerland), 12th-century calendar of, 190.
Cistercian Order: abbey at Castle Rushen, 2. *Pictor in Carmine* probably by Cistercian monk, 144.
Civil War, Castle Rushen surrendered during, 16.
Coll, Isle of (Hebrides), stone implements from, 134.
Colonsay, Isle of: flint found on, 117; late-Neolithic stone implements from, 134–6.
Conisborough Castle (Yorks.), 6.
Crimea (U.S.S.R.), 'Gothic' brooches from, 199.
Cronk y Mur (Cronk Moar) (I. of Man), motte on, 1–2.
Cross, 14th-century silver, with arms of St. Oswald, 183.
Crusades, defences of the citadel of Damascus, 57–96.
Cubbie Roo's Castle, Wyre (Orkney), rectangular tower at, 4.
Cul na Croise (Argyll), stone implements from, 129–30; microliths from, 132.
Cup-and-ring marking on Risga, Argyll, 128.

Dalton, O. M., on aeolipiles, cited, 29 *n.*
Damascus (Syria): The defences of the citadel of, 57–96; comparison with other castles and citadels, 59; ornament, classical, 68, 70; wall-thicknesses, 94.
Ancient Citadel, 60. New Citadel, 61. Bab-al Faraj (town-gate), 65, 94. Bab al-Hadid (North Gate), 83–7. Bab an-Nasr (town-gate), 65, 76–9. Bab as-Sirr, former gateway, 58, 91. Barbican, 77–8. Building 20, 60. Building 21, 79. Building 22, 79. Building 23, 79. Building 24, 79. Curtains, 62, 63, 64; 1–2, 64–5; 3–4, 70, 73; 4–5, 58, 75; 5–6, 76; 6–7, 77–8; 7–8, 65; 9–10, 83; 10–11, 65, 88; 11–12, 65, 89; 12–13, 91; 15–16, 87. Domestic buildings, 58, 63, 79. East Gate, 76–9. Mihrab: 79, 86. Mill (fortified, 15th century), 59, 94–7. Moat, 59. 'Murder-holes', 66, 70, 71, 84. Palace, 63–4. Site and outer defences, 59. Temple of Jupiter Damascenianus, 59. Tombs and shrines: 79, 86. Towers: 62, 63, standard plan, 65–6; Tower 1, 58, 64; Tower 2, 64, 65–8, 73; Tower 3, 58, 64, 65, 68–70, 73, 74; Tower 4, 58, 64, 65, 70–5; Tower 5, 58, 75–6; Tower 6, 65, 75–6, 77, Tower 7, 72 *n.*, 76–7; Tower 8, 58, 63, 72 *n.*, 79–82; Great Gate Tower, 62; Tower 9, 62, 65, 82–3; Gate-tower 10 (North Gate or Bab al-Hadid), 59, 83–7; Tower 11, 62, 65, 88–9; Tower 12, 89–91; Tower 13, 58, 65, 62; Gate-tower 14, 60, 86; Gate-tower 15, 60, 79, 83, 86–7; Tower 16, 60, 79, 87; Tower 17, 60, 79; Western front, 91.
Inscriptions: Summary, 92–3; Al-Adil, 63, 71, 74, 75, 83, 86, 87; an-Nasir Muhammad I, 75 *n.*, 77; an-Nasir Muhammad II, 75; Barquq, 78; Bybars, 70, 74, 75; Khoshqadam, 68; Mamluk (not otherwise identified), 68, 75; Nawruz al-Hafizi, 84, 89; Qalawun, 65, 72, 74; Qansuh al-gawri, 75, 76, 82, 89; Saladin, 60.
David, feigning madness and 'walking on his hands', 147–8.
Derby, Earls of: entries of expenditure at Castle Rushen in Accounts of, 15; I. of Man held by, 14, 16, 17; *see* individual earls *under* Stanley.
Deza (Soria), 'Gothic' brooch from, 209.
Dinas Emrys (Caernarvonshire), Keep, 4.
Dolwyddelan Castle (Caernarvonshire), Keep, 4.
Dominicans, aeolipiles perhaps known to, 40.
Dore, *see* Adam, abt. of.
Drynan Bay (Argyll), quartz and flint implements from, 130–3.
Dundee (Angus), flints from, 107.
Durham, copies of *Pictor in Carmine* from, 143, 144.
Dwarfs: forms of, used for aeolipiles, 45–6; Roman bronze statuettes of, 45.

Elizabeth, Queen, I. of Man in possession of, 16.
Ercker, Lazarus, aeolipiles illustrated by, 28.
Ethiopia, Northern (Abyssinia), building technique of churches in, 99–102.
Evangelists, The Four, used as type in *Pictor in Carmine* and with companion types from other sources (cxvi), 163. *See also* Apostles.
'Ezānā, King of Abyssinia, converted to Christianity, 101.

Fabricius, George, on Sondershausen aeolipile, cited, 31–2.
Feldhaus, F. M., on the Sondershausen Püstrich, and other aeolipiles, cited, 32, 33, 35.
Fire, World purged by, used as type in *Pictor in Carmine* and companion scenes (cxxxvi), 166.
Fire-bombs, medieval earthenware vessels perhaps used as, 52–4.
Fish-bones and scales, list of those found at Risga, Argyll, 116.
Fishing gear, barbed bone-points from Risga, 123.
Flamicourt (Somme), 'Gothic' brooch from, 198, 208 *n.*, 209.
Flint implements from Morar, 113–15.
Forni di sopra (Venetian Alps), church of S. Florian, St. Oswald represented in altar-piece and ceiling of apse, 177.
Fortress of the time of the Crusades, the defences of the Citadel of Damascus, 57–96.

Franceschini, Giacomo, painting of St. Oswald at Bologna by, 173.
Friuli, churches and hamlets in districts of, named after St. Oswald, 173–4.

Garniga (Tyrol), church of St. Oswald at, 182–3.
Geberich, King of the Visigoths, 201, 203, 204.
Gepidae, migrations of, 211.
Giblet (Jebail), double-parapets at, 74.
Glasgow (Lanarkshire); Hunterian and Kelvingrove Museums: finds from Oronsay in, 116, 117, 123; finds from Risga in, 116.
Glenarm (co. Antrim), flint scrapers from, 113.
Godred Crovan (or King Orry), conquest of Isle of Man by, 1.
Godred II: King of Man and of Dublin, 2; Castle Rushen Keep probably built by, 4.
Godwin, Dr. H., pollen analysis of peat from Kentra Bay, 133–4.
Gorten Bay (Argyll), medieval remains from, 129 *n.*
'Gothic' brooches, attributed to Vandals, 195–212.
Goujon, Jean, aeolipile illustrated by, 34–5.
Guarrazar gold crowns, 210.
Gültingen (Wurtemberg), cloison style of jewellery at, 210.

Hamburg (Germany), copper bust aeolipile in Kunstgewerbemuseum, 49.
Harlech Castle (Merionethshire), 24.
Harry's Walls (Isles of Scilly), 16.
Henley (Oxon.): aeolipile found at Paradise Farm, 38; *see under* Aeolipiles.
Henry IV, King of England, I. of Man in possession of, 13.
Hereford Cathedral, copy of *Pictor in Carmine* from, 143.
Heretics to the Church, Opposition of, used as type in *Pictor in Carmine* and companion scenes from the Old Testament (cxxxiii), 165.
Herford (Westphalia): relic of St. Oswald at, 193.
Hero of Alexandria, on aeolipiles, cited, 30, 33, 40.
Herpes (France), 'Gothic' brooch from, 207.
Hilton (Staffs.): Jack of, 33, 35–8; part played by, in ancient local custom, 36–8.
Hirsch, Robert von, bronze image of woman belonging to, 40, 41–2.

Ifinger mountain (Tyrol), chapel of St. Oswald on, 191.
Israel, Conversion of the Remnant of, used as type in *Pictor in Carmine* and companion scenes (cxxxv), 166.

Jack of Hilton, *see under* Aeolipiles.
Jerusalem (Palestine): Citadel of, 73, 74 *n.*; destruction of, by Titus and Vespasian, used as type in *Pictor in Carmine* with companion scenes from the Old Testament (cxxxii), 165.
John the Baptist, St., scenes from the life of, used as type in *Pictor in Carmine* with companion scenes from the Old Testament: Nativity (v), 152. Preaching and baptizing in the desert (xxiv), 154. Declares Christ to be the Lamb of God (xxv), 154. Baptism of Christ (xxvi, xxvii), 154. Rebukes Herod concerning Herodias (xlii), 156. Imprisoned (xliii), 156. Beheading of (lxiv), 158. Burial (lxv), 158.
John de Courcy, married to sister of Reginald, King of Man, 4.
Johnson, Dr. Samuel, on aeolipiles, cited, 28.
Judgement, Day of, used as type in *Pictor in Carmine* and companion scenes (cxxxviii), 166.

Ka'ba, The: in A.D. 608, 97–102; pictures on interior walls, and destruction of, 98–9; glass mosaic and marble columns brought from San'ā' for, 101–2.
Kalisz (Poland), 'Gothic' brooch from, 199.
Kärlich (Germany), 'Gothic' brooch from, 209.
Kassa (Hungary), 'Gothic' brooch from, 199.
Kastelrut (Tyrol), cult of St. Oswald at, 184.
Kentra Bay (Bruach na Maorach) (Argyll): relics of flint and quartz industry, 133–4; contacts with Bronze Age people, 137; pollen analysis, 133–4.
Kerab (Moab), Castle, double-parapet, 74 *n.*
Kermode, W. H., architect, employed at Castle Rushen, 21.
Kerrera, Isle of (Loch Linnhe), microlith from, 134.
Kidwelly Castle (Carmarthenshire), heightening of earlier work at, 13 *n.*
Kiev (S. Russia), 'Gothic' brooches from region of, 211.
Kircher, illustration of aeolipile by, 28, 50.
Klosterneuburg (Austria), cycle of scenes used on retable at, 150.
Krak des Chevaliers, Le (Palestine), 66 *n.*, 72 *n.*, 79, 80 *n.*; double parapets, 74.
Kyeser, Konrad, on aeolipiles, cited, 33, 35, 40, 54.

Laa an der Thaya (Austria), grave-finds at, 203.
Lambeth Palace Library, copy of *Pictor in Carmine* in, 144.
Langness (I. of Man), Civil War earthworks on, 17.
Lantic (Brittany), church of St. Oswald at, 193.
Larne (co. Antrim), Curran deposits, 113, 117 *n.*
Larnian stone industries, 106, 107, 112, 113.
Latham, Capt., and Walmsley, W., *Tour through Isle of Man in July, 1815*, by, cited, 19–20.
Leonard, St., cult of in S. Germany, 190.
Leonardo da Vinci, sketch of aeolipile by, 50.
Lethbridge, T. C., on stone industry in Scotland, cited, 128, 129 *n.*, 134, 136.
Lincoln Cathedral Library, copies of *Pictor in Carmine* in, 144; glass medallion representing David feigning madness and 'walking on his hands', at, 148.
London: National Gallery, sketch by Tiepolo for picture of St. Oswald in, 170.
Luss (Dumbartonshire), flaked-stone implements from Glen Finlas and Inchlonaig, 127.

Magnus Barefoot, King of Norway, forts in Isle of Man erected by, 1.
Mander, Gerald P., on 'Jack of Hilton', cited, 37.
Marchélepot (Somme), 'Gothic' brooch from, 206, 207.
Margat (Markab) (Syria), double-parapets at, 74 *n.*
Mary the Virgin, St.:
  scenes from the life of: cycle of scenes used in glass at Canterbury, 148. Used in *Pictor in Carmine* and

with companion scenes drawn from the Old Testament and other sources: Annunciation (i), 151. Goes through the 'hill-country' (ii), 151. Visitation (iii), 151. Song of Mary (*Magnificat*) (iv), 151. Journey to Bethlehem (vii), 152. Nativity of Christ (viii), 152. Purification (xvi), 153. For later scenes, *see under* Christ.

Mauls (Tyrol), shrine of St. Oswald at, 185.

Meiklewood (Stirling), red-deer antler tool from, 123.

Mekka (Arabia), The Kaʿba in A.D. 608, 97–102.

Meran (Tyrol), church of Untermais, St. Oswald represented in fresco; in painting in Meran Castle chapel; in wooden triptych in castle of Tyrol St. Oswald, 186.

Merlengo (Italy), picture of St. Oswald by Domenico Tiepolo at, 171.

Mesolithic Stone Industry from Morar, Inverness, 103–39.

Migrations of Visigoths and Vandals, 201–5, 210–11.

Milan (Italy), sketch by Tiepolo for picture of St. Oswald formerly at, 170.

Moggio, abbey of (Venetia), St. Oswald in calendars of, 190 *n.*

Mohammedan fortress of Damascus, 57–96.

Mongol conquests of Damascus, 74.

Monk Bretton Priory (Yorks.), copy of *Pictor in Carmine* from, 143.

Montacute:
- Sir William, I. of Man granted to, 10; building at Castle Rushen by, 13.
- Sir William, son of preceding, 11; building at Castle Rushen by, 13.

Moore, A. W., *History of the Isle of Man*, by, cited, 1.

Morar (Rough Bounds) (Inverness), Stone Industry from, 103–39; Early Post-Glacial raised beach, 105, 107–8; archaeology, 106; fauna, 106; geology of district, 103–5; prehistoric remains, 106; vegetation, 106.
- Rudha'n Achaidh Mhòir occupation-site, 109–15, 136, 137–9; bone finds, 115; flint artifacts, 109, 113–15; quartz artifacts, 109, 110–13, 115; quartz limpet-hammers, 125–6.

Morvern (Argyll), flint beds at, 117.

Munro, Dr. W. A., stone artifacts collected by, 103, 130–3, 138.

Münster (Switzerland), church of St. Oswald at, 187.

Murray:
- James, 2nd Duke of Atholl, I. of Man held by, 17.
- John, 3rd Duke of Atholl, I. of Man sold by, 17–18.
- John, 4th Duke of Atholl, letters from, reporting on Castle Rushen, 18, 19.

Nagy Várad (Hungary), 'Gothic' brooch from, 199, 205 *n.*, 206.

Nawruz al-Hafizi, inscriptions of, 84, 89.

Negroes, metal heads of, used as fire-blowers, 48, 49.

Neustift (Tyrol), monastery of, 190.

Novomoskovsk (S. Russia), aeolipile found near, 43, 47.

Oban (Argyll), relics from caves and rock shelters at, 116, 117, 122, 123, 127; antler (red-deer) implements from MacArthur cave, 122; bone-points from, 123–4; deer-horn implement from Druimvargie cave, 123; stone limpet-hammers from, 125–6.

Obanian: bone and stone implements from Argyll, 107, 115–28; age of culture, 126–8.

Oberlana (Tyrol), chapel of SS. Martin, Oswald, Faith, and Benedict at, 188–9.

Olaf I, King of Man, Cistercian abbey at Castle Rushen founded by, 2.

Olaf II, King of Man, 4.

Oronsay, Isle of, relics from prehistoric kitchen-middens at, 116, 122, 127; deer-antler tools from, 123; barbed bone-points from, 124; flint implements from, 116, 117; stone limpet-hammers from, 125–6; micro-burin from Cnoch Sligeach, 118; sharpened pebbles from Caisteal nan-Gillean, 120.

Orry, King, *see* Godred Crovan.

Ostrogoths, subject to the Huns, 202, 211.

Oswald, St.: in Northern Italy, The cult of, 167–94; list of Dedications in the Veneto, 192; coins with bust of, 194 *n.*; cult of, in Ireland, 193; invoked in times of pestilence, 167 *n.*, 168; raven an attribute of, 168, 170, 171, 173, 174–5, 177, 183, 184, 185, 187, 188; relics of: at Herford, 193; at Sauris, 175, 190; at Soissons, 193; at Weingarten, 189.
- Bassano, S. Vito, 183. Bedollo, church of St. Oswald, 182. Bergues, St. Oswald regarded as a weather saint at, 193. Bologna, S. Maria Incoronata, 173. Bozen, churches of St. Oswald, St. Oswald at Gries, and St. Johann im Dorf, 185; frescoes at church of St. Vigil, 189, 190. Brixen, 185, 190; 15th-century MS. Life of St. Oswald at, 192. Cartigliano, church of SS. Simon and Jude, 183–4. Chur, St. Oswald in calendar of diocese of, 190. Forni, St. Florian, 177. Friuli, 173–4. Garniga, church of St. Oswald, 182–3. Herford, relic at, 193. Ifinger Mountain, chapel on, 191. Kastelrut, 184. Lantic, church of St. Oswald at, 193. Mauls, shrine of St. Oswald, 185. Meran, church of Untermais, castle chapel of Meran, and chapel in castle of Tyrol St. Oswald, 186. Merlengo, picture by Tiepolo at, 171. Münster, church of St. Oswald, 187. Neustift, St. Oswald in calendar of monastery at, 190. Oberlana, chapel dedicated to, 188–9. Padua, S. Massimo, 170. Pawigl, church of St. Oswald, 187, 189. Rovereto, church of St. Oswald, 181. Sauris, 174–9, 190. Soissons, relic of St. Oswald at Notre Dame, 193. Tai, altar-piece at, 178. Tartsch, painting of St. Oswald on wall of house at, 187. Taufers, St. John's church, 187. Treviso, S. Leonardo, 171. Tschirland, church of St. Oswald, 187, 189. Udine, S. Valentino, 173; church of S. Osvaldo, 173. Venice, statue of, 167; Accademia, picture in, wrongly described as of St. Oswald, 169; S. Eustachio (S. Stae), 167–9; S. Silvestro, 169. Vicenza, S. Maria degli Angeli, 171–3. Weingarten, relics at monastery at, 189; cult of St. Oswald at, 188–9, 191. Zeddam, dedication to St. Oswald at, 194. Zug, coin from, 175.

Oxford, copies of *Pictor in Carmine* at, 143.

Padua (Italy), picture of St. Oswald in church of S. Massimo, 170.
Palingenius, Marcellus, earthenware steam fire-blower recorded by, 48, 54 *n.*
Palissy, Bernard, on aeolipiles, cited, 28–9.
Pannonia, relics of Vandal occupation of, 203.
Paré, Ambroise, on aeolipile, cited, 28.
Paris, Louvre Museum, bronze fire-blowing aeolipile in, 49.
Paul, St., scenes from life of, used as types in *Pictor in Carmine* and companion scenes from other sources: Sits at feet of Gamaliel (cxxii), 164. Persecutes Christians (cxxiv), 164. Conversion of (cxxvi), 164. Preaches at Damascus (cxxvii), 164. Escapes in a basket from the walls of Damascus (cxxviii), 165. 'And the disciples were called Christians first in Antioch' (cxxx), 165. Rejection of the Word of God by the Jews, and 'Lo, we turn to the Gentiles' (cxxxi), 165.
  Paul, St., and St. Peter, statues of at Venice, replaced by St. Oswald and St. Sebastian, 167.
Pawigl (Tyrol), church and wooden figure of St. Oswald at, 187–8, 189.
Pax, 18th-century silver, with figure of St. Oswald, 171.
Pellegrini, G. A., picture of St. Oswald by, 183.
Percy, Henry, Earl of Northumberland, I. of Man granted to, 13.
Perjámos (Hungary), 'Gothic' brooch from, 199.
Peter, St., *see* Paul, St., and.
Peterborough Cathedral (Northants.), series of types used for artistic purposes at, 146, 150.
Phillipps, Sir Thomas, copy of *Pictor in Carmine* in Collection of, 141, 143.
Philo of Byzantium, on a perfume-burner, cited, 31, 33.
Pictor in Carmine: 141–66; arrangement and scope of, 146–8; comparison with series of subjects used in glass, wall-painting, etc., 148–50; copies of, 143; notable omissions from types used, 146; probable sources drawn upon, 147–8.
Port Lewaigue (I. of Man), Civil War earthworks at, 17.
Püstrich: or Sondershausen aeolipile, 31–5; derivation of word, 32, 46.

Qalawun, Sultan, inscriptions recording repair work to Damascus defences, 65, 72, 74.
Qansuh al-Gawri, Sultan, inscriptions of, 75, 76, 82, 89.
Quartz implements found in Morar, 109–13, 120, 125.

Rabe, M. F., on Sondershausen Püstrich, cited, 32, 33.
Reading (Berks.), aeolipile from Henley in Museum at, 38.
Raglan, FitzRoy, afterwards 1st Lord, Castle Rushen restored by, 20, 21.
Reginald, King of Man, 4; additions to Castle Rushen by, 7.
Rental procedure, local customs attached to, 38.
Resurrection of the Dead, used as type in *Pictor in Carmine* and companion scenes (cvii), 162 (cxxxvii), 166.
Rigby, Armitage: *Castle Rushen* by, cited, 1, 3, 6, 8, 10, 11; Castle Rushen restored by, 20, 21, 22.
Risga (Loch Sunart) (Argyll): Obanian station on, 115–28; antler (red-deer) implements, 115, 122, 123; bone implements, 115, 120–5; cup-and-ring markings, 128; fishing gear (barbed bone-points) from, 123; flint and quartz implements, 115, 117–20; stone limpet-hammers from, 125–6.
  Animal remains 116; list of aquatic birds, 116; fish remains, 116; shells found on, 116.
Rosmini, Ambrogio, architect of St. Oswald's church, Rovereto, 181.
Rossi, Domenico, architect of S. Eustachio, Venice, 167.
'Rough Bounds', *see* Morar.
Rough Island, Strangford Lough (co. Down), fish-tail scraper from, 118.
Rovereto (Tyrol), churches of St. Thomas and St. Barbara demolished and succeeded by church of St. Oswald, 181.
Rudha'n Achaidh Mhòir (Inverness), occupation site, 108, 109–15, 136, 137–9.
Rudh'an Dunain, *see* Skye.
Rushall (Staffs.), ancient custom associated with rental procedure, 38.
Rushen, *see* Castle Rushen.
Russia, S., brooches from, 196–8.

St. Oswald (Tyrol), hamlet of, 190 *n.*
Sakrau (Silesia), 'Gothic' brooches from, 211.
Saladin, Citadel of Damascus strengthened by, 60, 87; inscription of, 60.
Sanna Bay (Argyll), prehistoric remains from, 128–9.
Sarmatae, migrations of, 203, 204, 211.
Saul, *see* Paul, St.
Sauris (N. Italy), cult of St. Oswald at, and place of pilgrimage, 174–9; relic of St. Oswald at, 175, 190.
Sauvaget, M., on Citadel of Damascus, cited throughout, 59–96.
Schmidt, Wilhelm, on stove for heating water, cited, 31.
Scilly, Isles of: Star Castle and Harry's Walls, 16; resistance and ultimate surrender during Civil War, 17.
Scott, Sir Lindsay, excavation at Rudh'an Dunain, Skye, 136.
Scroop, Sir William le, I. of Man sold to, 11.
Sebastian, St., statue of, at Venice, 167.
Shells, list of those found at Risga (Argyll), 116.
Shewalton (Ayrshire), microlithic arrow-head from, 132.
Siddinghausen (Westphalia), record of aeolipile at, 43–4.
Skye, Isle of, bloodstone and quartz implements and beaker ware found at Rudh'an Dunain, 136; implements from Bronze Age cairns at Tote, Skeabost, 136.
Soissons (Aisne), relic of St. Oswald at, 193.
Sondershausen Castle (Schwarzenburg-Sondershausen), bronze aeolipile from the Rotenburg now in, 31–5; *see also under* Aeolipiles.
Spain, relics of Germanic culture in, 208, 209.
Stanley:
  Edward, 3rd Earl of Derby, I. of Man held by, 14.
  James, Lord Strange, afterwards 7th Earl of Derby, I. of Man ruled by, 16.
  James, 10th Earl of Derby, bell inscribed with name of, 21.

Sir John (*d.* 1414), I. of Man granted to, 13.
William, 6th Earl of Derby, I. of Man granted to, 16.
Star Castle (Isles of Scilly), 16.
Stephen, St., Stoning of, used as type in *Pictor in Carmine* and companion scenes from other sources (cxxiii), 164.
Stirling (co. Stirling), antler tools and remains of whale from neighbourhood of, 106–7, 123.
Stone Industry from Morar, Aberdeenshire, 103–39.
Strasbourg (Alsace), 'Gothic' brooch from, 207.
Subeibeh, Crusader towers at, 63.
Szabadbattjan (Hungary), 'Gothic' brooches from, 196 *n.*, 199.
Szilágy Somlyó (Hungary), brooches from hoard at, 196, 200, 208, 210, 211.

Tai (N.E. Italy), St. Oswald represented in altar-piece at, 178.
Tamerlane, conquest of Damascus by, 74, 84.
Tamworth (Warwicks.), Henley aeolipile formerly at Amington Hall, 38, 39, 41.
Tartsch (Tyrol), painting of St. Oswald on wall of house at, 187.
Taufers (Tyrol), St. Oswald represented in fresco in church of St. John at, 187.
Termes (Soria), 'Gothic' brooch from, 209.
Tiepolo: Domenico, picture of St. Oswald at Merlengo by, 171.
Giovanni Battista, picture of St. Maximus and St. Oswald by, 170.
Tolmezzo, Gianfresco da, paintings in St. Florian's church, Forni, by, 177.
Tortosa (Spain), castle, double-parapets, 74 *n.*
Treviso (Italy), S. Leonardo, cult of St. Oswald in church of, 171.
Trim Castle (co. Meath), 6.
Trinity, Revelation of the, used as type in *Pictor in Carmine* (xxviii), 154.
Triptychs, wooden, 178, 186.
Trivellini, Francesco, picture of St. Oswald by, 183.
Tschirland (Tyrol), church of St. Oswald at, 187, 189.
Tyrrel, Sir Hugh, Castle Rushen defended by, 11.

Udine (Italy), picture of St. Oswald in church of S. Valentino, 173; statue of St. Oswald in church at S. Osvaldo, 173.
Uist, South (Hebrides), flint implements from Daliburgh, 136.
Unterbergher:
Christopher, picture of St. Oswald by, 181.
Franz, altar-piece at Kastelrut by, 184.
Untersiebenbrunn (Austria), grave-find from, 200, 203, 208, 209.

Valtos, Uig (Lewis), artifacts from hut-circles at, 137; quartz scrapers from, 113.
Vandals: 'Gothic' brooches attributed to, 195–212; areas of Western Europe occupied by, 206; parts of East Hungary occupied by, 202–3, 205; brooches imported to Gaul by, 206; Pannonia occupied by, 203; migrations of, 201, 205, 211–12.
Varese, Lago di (N. Italy), 'Gothic' brooches from, 211.
Vecellio, Cesare, altar-piece at Tai by, 178.
Venice (Italy): Accademia, picture in, wrongly described as of St. Oswald, 169–70. Museo Correr, metal head fire-blower in, 48, 49; office-book of 1790 in, 169. S. Eustachio (S. Stae), architect and sculptors employed at, 167; cult of St. Oswald at, 167–9; statues of St. Peter and St. Paul replaced by St. Oswald and St. Sebastian, 167. S. Silvestro, cult of St. Oswald at, 169.
Vernon, W. F., on 'Jack of Hilton', cited, 33; Jack of Hilton exhibited by, 36.
Verona, San Zeno, bronze doors at, 42.
Vicenza (Italy), S. Maria degli Angeli', altar of St. Oswald at, 171–3.
Victoria and Albert Museum: medieval earthenware and glass vessels of Islamic origin in, 52–3.
Vienna, bronze fire-blowing image of woman formerly in Hofmuseum, 42, 47.
Villafontana (Italy), 'Gothic' brooch from, 207.
Virgil Solis, aeolipile illustrated by, 34–5.
Visigoth or Vandal, 195–212.
Visigoths, admission to Roman Empire, 201; migrations of, 201, 210.
Vitruvius on aeolipiles, cited, 27, 28, 31, 33, 35.

Walmsley, W., *see* Latham, Capt.
Waltham Abbey (Essex), copy of *Pictor in Carmine* from, 143.
Warkworth Castle (Northumberland), 13.
Way, Albert, on aeolipiles, cited, 33.
Weineck family, St. Oswald patron of, 189.
Weingarten (Swabia): cult of St. Oswald at monastery of, 188–9, 191.
Welf, Bavarian family of, 188, 189.
Whale, remains of, round Stirling, 106, 123.
Wilkins, John, Bp. on aeolipiles, cited, 28, 50.
Wolkenstein, Oswald von, chapel of St. Oswald founded by, 184–5.
Woodcroft, Bennet, on aeolipiles, cited, 30, 31.
Worcester Cathedral Library, *Pictor in Carmine* formerly in, 143.

Zeddam (Holland), dedication to St. Oswald at, 194.
Zemzem, Sacred well of, 97, 98.
Zug (Switzerland), St. Oswald on coin from, 175.

PRINTED IN
GREAT BRITAIN
AT THE
UNIVERSITY PRESS
OXFORD
BY
CHARLES BATEY
PRINTER
TO THE
UNIVERSITY

Periodicals
A